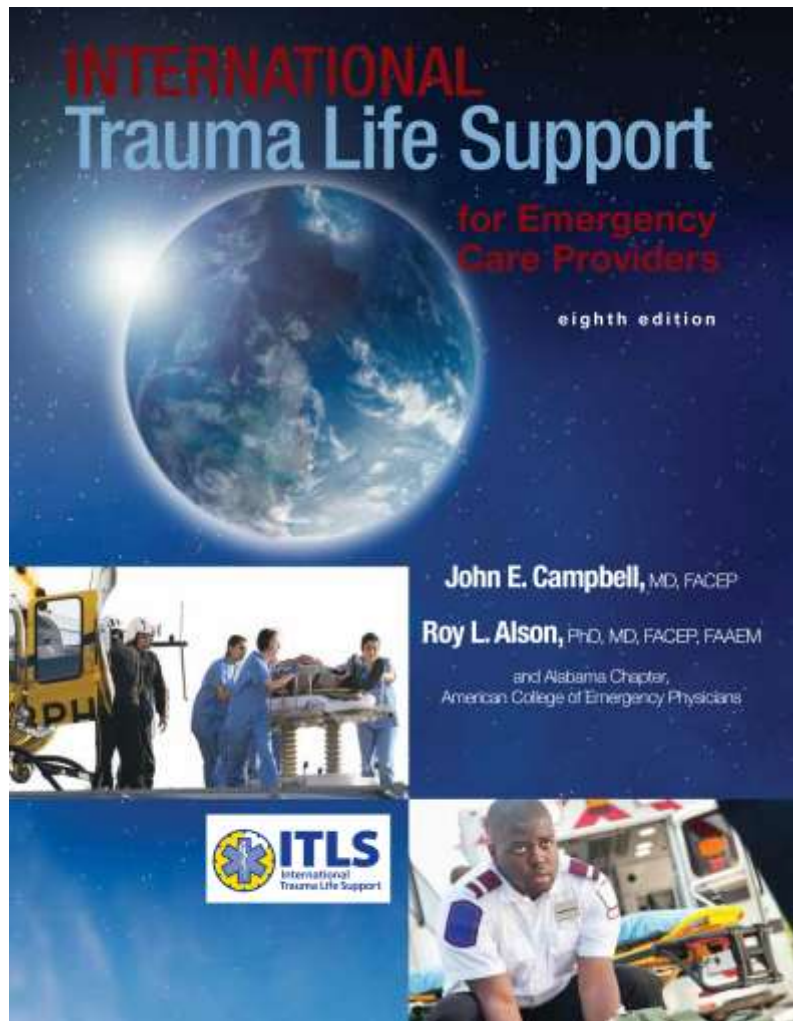


Coordinator and Instructor Guide

International Trauma Life Support for Emergency Care Providers *Eighth Edition*



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MISSION STATEMENT OF THE ITLS ORGANIZATION

International Trauma Life Support, Inc. is a global organization dedicated to preventing death and disability from trauma through education and emergency trauma care.

PREFACE

The Alabama Chapter of the American College of Emergency Physicians (ACEP) developed the Basic Trauma Life Support (BTLS) course in 1982. The decision to develop such a course was based on the need for good “hands-on” continuing education courses for EMTs and other EMS personnel. BTLS has since changed its name to International Trauma Life Support (ITLS) and become accepted internationally as the standard training course for prehospital trauma care and now is not only taught as a continuing education course but also used in many EMT training programs.

This instructor and coordinator guide is designed to help you conduct an organized ITLS course. ITLS courses are monitored and certified by local ITLS chapters and training centres. Student texts and slides are available to be used with this manual. The ITLS course is usually conducted over a two-day period, but if time is available, this material can be better taught over a longer period, such as during EMT training. Information about how to schedule a certified course in your area can be obtained by contacting the ITLS office:

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Downers Grove, IL 60515
USA
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Phone outside U.S.: +1-630-495-6442
Fax: +1-630-495-6404
E-mail: info@itrauma.org
Internet: www.itrauma.org

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Overview of ITLS Courses

Trauma, the medical term for injury, continues to be a major health problem around the world. In the United States, trauma is the fourth-leading cause of death for all ages and the leading cause of death for children and adults under the age of 45 years. Trauma is the leading cause of death in the 15- to 24-year-old age group. For every fatality, there are 10 more patients admitted to hospitals and hundreds more treated in emergency departments. The price of trauma, in both physical and fiscal resources, mandates that all emergency medical services (EMS) personnel learn more about this disease to treat its effects and decrease its incidence.

Because the survival of trauma patients is often determined by how quickly they get definitive care in the operating room, it is crucial that you know how to assess and manage the critical trauma patient in the most efficient way.

The purpose of the ITLS course is to teach the most rapid and practical method to assess and manage critical trauma patients. The course is a combination of written chapters to explain the “why” and the “how” and skills training to practice knowledge and skills on simulated patients so that at the end of the course you feel confident in your ability to provide rapid lifesaving trauma care.

The ITLS course focuses on the skills necessary to recognize mechanisms of injury; perform an organized, time-efficient assessment; prioritize and perform critical interventions; and appropriately package and transport the trauma patient. A major focus of the course is the identification of conditions that require immediate transport (“load and go”) in order to save the patient. The ITLS course is designed to teach basic level (EMT-Bs and first responders) and advanced level (paramedics, advanced EMTs, nurses, physicians, etc.) emergency care providers. Lifesaving techniques are taught or reviewed in practical exercises. Newly developed equipment is provided, when possible, to allow the students to become familiar with state-of-the-art techniques and equipment.

Although the course is designed for the prehospital phase of EMS, it is also useful to medical students, emergency medicine residents, registered nurses, nurse practitioners, and physician assistants interested in trauma care. Not only will the lectures and most of the skills be useful, but they will also provide a unique view of the world in which EMTs must function, which is very different from the “cozy confines” of the emergency department.

Course Synopsis

The two-day (16-hour) format for ITLS courses is considered the most practical, even though it limits lecture time and requires precise timing of skill stations. Most students and faculty simply do not have more than two days available to attend courses. Where there are no time constraints, you may take more time with both the lectures and the skill stations and thus enhance

learning the material. An excellent way to do this is to teach the course over two-and-a-half days, in the evenings twice a week, or over a college semester. Sample schedules are included later in this chapter.

LECTURES

Coordination of the lectures is of utmost importance. The lectures set the stage for the course, and equipment malfunction or speaker delays detract from the remainder of the course. The lecture assignments may be divided among the instructors or handled by one instructor as desired. The course director or coordinator should take into consideration each person's ability to lecture. It is important that the instructors are assigned and have the PowerPoint slide presentation at least two weeks before the course. It is also important for the course director to be available in the event that an instructor is late or does not show up. The course coordinator or director must get the lecturers started and finished on time. Chapter objectives and key lecture points can be found in Chapter 6.

Many ITLS provider courses are considered "combined" courses with both basic and advanced level students. Basic and advanced courses may also be taught separately.

Advanced ITLS

The first 22 chapters of the student manual are considered "core" material and should be covered in all courses. All appendix material is posted on the ITLS website and is optional. The optional material should *not* be covered in a 2-day or 2-and-a-half-day course. If you are teaching ITLS as part of the curriculum of an advanced EMT or paramedic course, you may want to include the optional material on the website. The students must be notified in advance if any optional material is to be covered.

Basic ITLS

Chapters 1–4, Chapter 5: Airway Skills, Chapters 6, 8, 10–20, and 22 are considered core material and should be covered in all basic courses. (Chapter 5: Advanced Airway Skills and Chapters 7, 9, and 21 are for the advanced course.) All appendix material is posted on the ITLS website and is optional. The optional material should *not* be covered in a 2-day or 2-and-a-half-day course. If you are teaching ITLS as part of the curriculum of an EMT course, you may want to include the optional material on the website. The students must be notified in advance if any optional material is to be covered. Students should be encouraged to learn the material in the optional chapters to further round out their trauma care knowledge base.

SKILL STATIONS

Skill stations are the heart of the ITLS course and are a key component to student success. The skill stations should complement lectures and not repeat information already presented.

Skill station objectives, equipment lists, and teaching outlines can be found in Chapter 6 of this Coordinator and Instructor Guide. The skill stations are:

1. Assessment Skills
2. Airway Skills
3. Thoracic Trauma Skills
4. Vascular Access Skills
5. Spine Management Skills
6. Extremity Trauma Skills
7. Assessment Skills

Skill Stations 1–6 are core skills for the advanced course. There are two Assessment Skills stations during the rotations. During the first rotation, students observe a detailed demonstration of patient assessment and review the ground rules of practice and testing. Students should understand the specific steps of the assessment and the implications for management after the first rotation. During the second rotation, students practice patient assessment using a scenario (see Chapter 6).

You are not expected to teach all types of traction splints. Teach the traction splint in common use in your area. In the chest decompression station, it is recommended that you teach the anterior chest technique. Intraosseous infusion is a core skill while external jugular vein cannulation is optional depending upon local protocol.

Skill Station Rotations

The students must be assigned to groups for skill station rotations. An easy way to do this is to divide them into the same number of groups as there are skill stations (see the tentative schedules later in this chapter) and assign a number for each group for the skill station rotations. It does not matter if all of the groups do not have the same number of students.

EXAMPLE: If there are 24 students and 7 skill stations, you would have four groups of three students and three groups of four students.

EXAMPLE: If there are 20 students and 6 skill stations, you would have four groups of three students and two groups of four students.

An easy way to do this is to point out “1, 2, 3, 4, 5, 6, 7 [to the number of skill stations], Group One; 1, 2, 3. . . Group Two,” and so on, while the students are still seated. Tell them to report to the skill station that is the same as their group number. In other words, Group One goes to Station 1, Group Two to Station 2, and so on. Explain to the students that, when the timekeeper announces, “CHANGE STATIONS,” each group will rotate up one number. For example, Group One goes to Station 2, Group Two goes to Station 3, and so on. Also explain that when rotating from the station with the highest number, that group goes to Station 1. (See the tentative schedules later in the chapter.)

Most course coordinators wait to assign groups until the students have arrived for class. If groups are assigned before class begins, you may have to rearrange groups if some of the students do not show up.

PATIENT ASSESSMENT SCENARIO PRACTICE AND TESTING

The patient assessment scenario stations are the heart of the course. They integrate the students' professional experience, the lectures, and the skill stations. They are the stage for the hands-on learning of ITLS. You may choose from the patient assessment scenarios in Chapter 4.

Because the Glasgow coma scale (GCS) score is used in patient assessment, you should provide a copy of the GCS for the students to use when they practice and test or refer them to a GCS electronic application (they are not expected to memorize it). A copy of the GCS is included in the Forms section of Chapter 9.

The number of scenarios that you use will depend on the number of students in the course. You need at least one scenario station for each three students. By design students will have exposure to a minimum of six scenarios (three practices and three tests for a group of three). You will almost always need an extra scenario station for retests, but this can be put together at the end of the day if you are short of instructors. There must be two instructors for each patient assessment test station, one to interact with the students and one to fill out the grade sheet. If you mingle basic and advanced students, the instructor must indicate the student's level of training (basic or advanced) on the grade sheet and conduct the practice and test according to the appropriate level.

When your students are ready to be assigned for rotation of their practice and testing scenarios, they need to be divided into groups of three.

Tell them to report to the patient assessment station that is the same as their group number. In other words, Group One goes to Station 1, Group Two to Station 2, and so on. Explain to the students that when the timekeeper announces, "CHANGE STATIONS," each group will rotate up one number. For example, Group One goes to Station 2, Group Two goes to Station 3, and so on. Also explain that when rotating from the station with the highest number, that group goes to Station 1.

If your head count leaves you with two students in the last group, they can rotate as a group of two. If your head count leaves you with one student in the last group, take that student and one student from another group and make two groups of two. A group of four students will not allow your stations to rotate smoothly. The groups of two students will rotate to the third practice station. One of the students will practice twice. This allows the group of two to participate in three practice stations, the same as the other groups. When they move to the fourth station, it will be a test as it is for everyone else. However, after both students test, they will be finished.

Each student should experience an assessment teaching station for 20 minutes and an assessment testing station for 10 minutes. These times may vary according to your discretion.

By using this system, your rotations will be smooth with very little coordinating, and nothing needs to be written down. Students who do not show up for the course will not affect your rotations. Enough copies of grade sheets must be made so that each station will have enough for all the teams that practice and test. A grade sheet is filled out for each team (specifically, the team leader) that practices or tests in a station.

All groups typically rotate through the patient assessment testing stations at the same time. However, if there is an insufficient number of faculty members to conduct concurrent stations for each group, some course coordinators arrange for half of the groups to take the written exam while the other half take the patient assessment test. If you use this type of rotation, it is very important to keep the two groups of students separated so there is no exchange of test information (written or practical) between the two groups.

EXAMPLES OF COURSE TIMETABLES

The classic ITLS course schedule has had lectures in the morning and skills in the afternoon for 2 days. It was originally done this way to follow the example of the ATLS and ACLS courses. Utilizing this format necessitates teaching skills that will not be covered in a lecture until the second day. Some ITLS programs have modified the schedule so that all of the lectures are presented on the first day, and the skill stations are taught the morning of the second day. Testing occurs the afternoon of the second day. Many of the students find this more acceptable in spite of facing hours of lectures on the first day, and may be coordinated to require fewer instructors for presentation of the didactic material.

The use of case-based learning may be utilized to facilitate application of the didactic material and psychomotor skills offered through an ITLS Provider course. This student-centered approach is offered through an interactive and explorative process of realistic and specific patient conditions. A primary outcome of case-based learning is to enhance discovery of concepts and promote analytical thinking through discussion of key case facts.

ITLS does not dictate a specific course format. Coordinators, along with the instructors and the medical director, should evaluate the sample formats provided to determine which model is best in achieving the goals of the ITLS Provider course. In addition, the Ohio chapter has developed a case-based course agenda. More information is available from the International office.

On the following pages, you will find:

- Sample Course Timetable: Advanced Two-Day Course, Lectures Both Days
- Sample Course Timetable: Advanced Two-Day Course, Lectures First Day

- Sample Course Timetable: Advanced Two-and-a-Half-Day Course
- Sample Course Timetable: Basic Two-Day Course, Lectures Both Days
- Sample Course Timetable: Basic Two-Day Course, Lectures First Day
- Sample Course Timetable: Basic Two-and-a-Half-Day Course

TRADITIONAL SAMPLE COURSE TIMETABLES (ADVANCED PROVIDERS)

Sample Course Timetable: Advanced Two-Day Course, Lectures Both Days

First Day

Sign-In and Collection of Pretests	30 min
Welcome and Introduction	5 min
Standard Precautions & Transmission-Based Precautions	10 min
Scene Size-Up	30 min
Patient Assessment and Management, and Trauma Arrest	45 min
Patient Assessment Demonstration or DVD	15 min
Break	15 min
Airway Management	30 min
Shock	30 min
Lunch and Faculty Meeting	60 min
Thoracic and Abdominal Trauma	30 min
Head and Spinal Trauma	30 min
Extremity Trauma	30 min
Skill Stations (can vary from 30 – 45 minutes each)	210 min
1. Assessment Skills	
2. Airway Skills	
3. Thoracic Trauma Skills	
4. Vascular Access Skills	
5. Spine Management Skills	
6. Extremity Trauma Skills	
7. Assessment Skills	
Faculty Meeting	30 min

Second Day

Burns	45 min
Trauma in Pregnancy	30 min
Pediatric Trauma	45 min
Break	15 min
Geriatric Trauma	25 min
The Impaired Patient	20 min
Patient Assessment Scenarios	60 min
Lunch and Faculty Meeting	60 min
Patient Assessment Scenarios	90 min
Practical and Written Examination	120 min
Faculty Meeting	30 min
Results to Students	

Sample Course Timetable: Advanced Two-Day Course, Lectures First Day

First Day

Sign-In and Collection of Pretests	30 min
Welcome and Introduction	15 min
Standard Precautions & Transmission-Based Precautions	10 min
Scene Size-Up	30 min
Patient Assessment and Management, and Trauma Arrest	45 min
Patient Assessment Demonstration or DVD	15 min
Break	15 min
Trauma in Pregnancy/Geriatric Trauma	45 min
Shock	30 min
Pediatric Trauma	45 min
Lunch	60 min
Thoracic Trauma	30 min
Head Trauma & Traumatic Brain Injury	30 min
Airway Management	30 min
Abdominal/Extremity Trauma	45 min
Break	15 min
Burns	45 min
Spinal Trauma	30 min
The Impaired Patient	20 min
Faculty Meeting	30 min

Second Day

Patient Assessment Demo, Questions and Answers	30 min
Skill Stations (30 minutes each)	210 min
1. Assessment Skills	
2. Airway Skills	
3. Thoracic Trauma Skills	
4. Vascular Access Skills	
5. Spine Management Skills	
6. Extremity Trauma Skills	
7. Assessment Skills	
Lunch	60 min
Written Test	60 min
Practice and Testing Scenario Stations	120 min
Faculty Meeting	30 min
Results to Students	

Sample Course Timetable: Advanced Two-and-a-Half-Day Course

First Evening

Faculty Meeting	15 min
Sign-In and Collection of Pretests	30 min
Welcome and Introduction	15 min
Scene Size-Up	30 min
Patient Assessment and Management, and Trauma Arrest	45 min
Patient Assessment Demonstration or DVD	15 min
Break	15 min
Patient Assessment Practice	90 min

The students should be divided into groups of six. There should be enough stations set up (4 for a class of 24 or 6 for a class of 36) for each group to watch one patient assessment demonstration and then divide into two groups of three to practice patient assessment.

Second Day

Sign-In and Coffee	30 min
Airway Management	30 min
Thoracic Trauma/Shock Evaluation and Management	60 min
Spinal Trauma	30 min
Break	15 min
Head Trauma & Traumatic Brain Injury	30 min
Abdominal/Extremity Trauma	45 min
Burns	30 min
Lunch and Faculty Meeting	60 min
Skill Stations (30 – 45 minutes each)	150 min
1. Assessment Skills	
2. Airway Skills	
3. Thoracic Trauma Skills	
4. Vascular Access Skills	
5. Spine Management Skills	
6. Extremity Trauma Skills	
7. Assessment Skills	
Faculty Meeting	30 min

Third Day

Sign-In and Coffee	30 min
Trauma in Pregnancy/Geriatric Trauma	30 min
Pediatric Trauma	30 min
The Impaired Patient	20 min
Standard Precautions & Transmission-Based Precautions	15 min
Break and Faculty Meeting	15 min
Patient Assessment Practice and Testing	90 min

Lunch	60 min
Written Test	60 min
Continue Patient Assessment Practice and Testing	
Faculty Meeting	30 min
Results to the Students	

TRADITIONAL SAMPLE COURSE TIMETABLES (BASIC PROVIDERS)

Sample Course Timetable: Basic Two-Day Course, Lectures Both Days

First Day

Sign-In and Collection of Pretests	30 min
Welcome and Introduction	5 min
Standard Precautions & Transmission-Based Precautions	10 min
Scene Size-Up	30 min
Patient Assessment and Management	45 min
Patient Assessment Demonstration or DVD	15 min
Break	15 min
Airway Management	30 min
Shock Evaluation and Management	30 min
Lunch and Faculty Meeting	60 min
Thoracic and Abdominal Trauma	30 min
Head and Spinal Trauma	30 min
Extremity Trauma	30 min
Skill Stations (30 – 45 minutes each)	180 min
1. Assessment Skills	
2. Airway Skills	
3. Thoracic Trauma Skills	
4. Vascular Access Skills	
5. Spine Management Skills	
6. Extremity Trauma Skills	
7. Assessment Skills	
Faculty Meeting	30 min

Second Day

Burns	45 min
Trauma in Pregnancy	30 min
Pediatric Trauma	45 min
Break	15 min
Geriatric Trauma	25 min
The Impaired Patient	15 min
Patient Assessment Scenarios	60 min
Lunch and Faculty Meeting	60 min
Patient Assessment Scenarios	90 min
Practical and Written Examination	120 min
Faculty Meeting	30 min
Results to Students	

Sample Course Timetable: Basic Two-Day Course, Lectures First Day

First Day

Sign-In and Collection of Pretests	30 min
Welcome and Introduction	15 min
Scene Size-Up	30 min
Standard Precautions & Transmission-Based Precautions	10 min
Patient Assessment and Management	45 min
Patient Assessment Demonstration or DVD	15 min
Break	15 min
Trauma in Pregnancy/Geriatric Trauma	45 min
Shock Evaluation and Management	30 min
Pediatric Trauma	45 min
Lunch	60 min
Head Trauma	30 min
Airway Management	30 min
Thoracic Trauma	30 min
Abdominal/Extremity Trauma	45 min
Break	15 min
Burns	45 min
Spinal Trauma	30 min
The Impaired Patient	15 min
Faculty Meeting	30 min

Second Day

Patient Assessment Demo	
Questions and Answers	30 min
Skill Stations (30 minutes each)	180 min
1. Assessment Skills	
2. Airway Skills	
3. Thoracic Trauma Skills	
4. Vascular Access Skills	
5. Spine Management Skills	
6. Extremity Trauma Skills	
7. Assessment Skills	
Lunch	60 min
Written Test	60 min
Practice and Testing Scenario Stations	120 min
Faculty Meeting	30 min
Results to Students	

Sample Course Timetable: Basic Two-and-a-Half Day Course

First Evening

Faculty Meeting	15 min
Sign-In and Collection of Pretests	30 min
Welcome and Introduction	15 min
Scene Size-Up	30 min
Patient Assessment and Management	45 min
Patient Assessment Demonstration or DVD	15 min
Break	15 min
Patient Assessment Practice	90 min

The students should be divided into groups of six. There should be enough stations set up (4 for a class of 24 or 6 for a class of 36) for each group to watch one patient assessment demonstration and then divide into two groups of three to practice patient assessment.

Second Day

Sign-In and Coffee	30 min
Airway Management	30 min
Thoracic Trauma	30 min
Shock Evaluation and Management	30 min
Spinal Trauma	30 min
Break	15 min
Head Trauma	30 min
Abdominal/Extremity Trauma	45 min
Burns	30 min
Lunch and Faculty Meeting	60 min
Skill Stations (30 – 45 minutes each)	120 min
1. Assessment Skills	
2. Airway Skills	
3. Thoracic Trauma Skills	
4. Vascular Access Skills	
5. Spine Management Skills	
6. Extremity Trauma Skills	
7. Assessment Skills	
Faculty Meeting	30 min

Third Day

Sign-In and Coffee	30 min
Trauma in Pregnancy/Geriatric Trauma	30 min
Pediatric Children	30 min
The Impaired Patient	15 min
Standard Precautions & Transmission-Based Precautions	15 min
Break and Faculty Meeting	15 min

Patient Assessment Practice and Testing	90 min
Lunch	60 min
Written Test	60 min
Continue Patient Assessment Practice and Testing	
Faculty Meeting	30 min
Results to the Students	

FACULTY MEETINGS

Precourse

This meeting has traditionally taken place the evening before the course but may be done early in the morning during course registration. This meeting serves several important functions:

1. Orient the faculty to each other and to the site.
2. Orient the faculty to the particular student composition (EMTs, first responders, paramedics, registered nurses, medical students, medical residents, etc.).
3. Update any changes in the agenda and remind faculty of the importance of adhering to scheduled lecture times.
4. Update the latest ITLS innovations and directives from the affiliate faculty present.
5. Review the goals and objectives of an ITLS course (see Chapter 2).
6. Remind faculty that the discussion of students that takes place in the faculty meetings is to be kept in the meetings.
7. Review both the Coordinator and Instructor Guide and the student manual to ensure consistency among instructors for the entire course.
8. Review available equipment.
9. Review any skill station revisions, and local procedures or protocols that might directly impact the station.
10. Identify last-minute faculty no-shows.
11. Schedule daily faculty meetings.

Before Skill Station Rotations

This should be a brief meeting to review teaching techniques and objectives of the skill stations. Specifically stress that skill stations are not for lectures but for demonstration and hands-on training. Emphasize that each session must begin and end on time.

Before Assessment Scenario Practice and Testing

The most frequent student complaint in course critiques has been inconsistency among the faculty members' teaching and testing assessment scenarios. This meeting should review the following sections in both the student manual and the instructor guide:

1. Ground rules for team practice and testing (Chapter 3 in the student manual).
2. Breakdown of performance criteria (see Chapter 2 in the instructor guide).
3. How to fill out the grade sheet (specifically, notes to be taken relative to student performance and critical identifying data).
4. Pass/fail criteria (see Chapter 2 in the instructor guide).
5. Retest policy (see Chapter 2 in the instructor guide).
6. Emphasize need to orient models to the scenarios.
7. Reminder that the purpose of the faculty is to help the student learn enough to pass the course. Every effort must be made to identify weaknesses and assist the student in correcting them.

Postcourse

This meeting is to determine each student's final grade. When grading is completed, the faculty should be encouraged to critique the course and offer constructive suggestions for future courses.

Each student's written test scores and patient assessment scores (both practice and test) should be collated with the student's photo (optional) and considered by the faculty.

If a student fails the patient assessment station, the faculty may consider the student's practice grade to see whether a marginal increase in the grade is warranted. The same is true if the student is a possible instructor candidate. The scenario practice grade cannot be used to lower a passing grade. In other words, faculty members should consider practice scores only if they are considering raising the student's grade. Because patient assessment is a somewhat subjective score, there are always some changes (and a lot of lively discussions) at the faculty meeting.

The grade sheets of students who fail, especially if they fail the retest, should include careful documentation of why they failed. Students should always be allowed to review the information missed on written tests and patient assessment grade sheets after the faculty meeting. Thus, be very careful in your documentation.

Faculty Critique

This is usually the last time that the faculty will be together until another ITLS course. Now is the time to collect comments from the faculty about the course and the teaching material. How can they be improved? ITLS is always interested in ways to improve the text, slides, and instructor guide. All comments and suggestions are appreciated and carefully considered for changes in future editions. The future development of ITLS depends on continued constructive criticism by students and faculty.

2

Administrative Considerations

FREQUENTLY ASKED QUESTIONS

What Is the Mission of the ITLS Organization?

ITLS is a global organization dedicated to preventing death and disability from trauma through education and emergency trauma care.

What Are the Goals and Objectives of the Basic and Advanced ITLS Courses?

1. Teach fundamental hands-on trauma care.
2. Teach a target audience of advanced EMTs, paramedics, and registered nurses for the advanced course and a target audience of EMT-Bs and first responders for the basic course.
3. Maintain quality assurance so that the same fundamentals are taught consistently throughout the world yet allow for regional differences.
4. Keep the course current.
5. Keep the course short enough to be taught in 16 hours.
6. Strive to make teaching and learning ITLS simple and practical.
7. Keep the course conservative and noncontroversial so that the principles taught reflect the current standard of care.

Who Can Teach the Course?

ITLS courses must be taught by certified ITLS instructors. Effective 2015, ITLS has adopted a hybrid model for Instructor training. To become an ITLS instructor, one must:

1. Successfully complete the ITLS Provider course they wish to teach (Advanced or Basic, or Pediatric).
2. Earn the Instructor Potential designation by achieving specific scores on **both** the Written and Practical Exams at the Provider course:
 - a. At least 86% on the Written Exam
 - b. Excellent on the Patient Assessment Practical Exam
3. Purchase and complete the Instructor Course Online Component, an 8-module online course built on a foundation of adult education principles.
4. Attend an Instructor Course Classroom Component course, where they will review and practice facilitating skill stations, administering testing procedures, and evaluating student performance.
5. Be monitored teaching a lecture, skill station, and testing at an ITLS Provider course.

Individuals who complete an Advanced course are eligible to teach Basic and Advanced-level courses. Individuals who complete a Basic course may teach only Basic-level courses.

Physicians who are Board certified in emergency medicine, or who are ATLS providers, or who actively participate in and teach trauma care, may take the ITLS Instructor course without taking the Provider course.

In unusual circumstances, a physician or other EMS provider (EMT, nurse, nurse practitioner, or physician assistant) who has not taken the ITLS Instructor course may help teach an ITLS course. However, this may be done only with the permission of the ITLS chapter or training centre medical director or coordinator. These requirements are necessary to maintain the high quality of ITLS courses.

Can ITLS Courses be Conducted in Areas That Do Not Have an ITLS Chapter or Training Centre?

Yes. ITLS courses may be taught in areas where there is no ITLS chapter or training centre. All such courses must be approved by the International office at least 60 days prior to the course. Applications are available on the ITLS website at www.itrauma.org or by calling ITLS at 1-888-495-ITLS (outside U.S.: +1-630-495-6442).

Who Can Take the Course?

The advanced course material requires the ability to start intravenous fluids and to perform advanced airway management. Advanced airway management is defined as the use of a blind insertion airway device, or endotracheal tube. This limits the full course to advanced EMTs, paramedics, medical students, medical residents, registered nurses, nurse practitioners, physicians and physician assistants. The basic course is for EMS personnel who cannot perform advanced procedures (basic EMTs, first responders, and licensed practical nurses). ITLS does not advocate or condone teaching students to perform skills outside their scope of practice.

What is the ITLS Student Text Policy?

ITLS requires that each student must have a copy of the appropriate ITLS course manual at least 30 days before the course date for adequate time to prepare for the course.

How Many Students Can Be Taught in a Course?

The number of students that can be taught in a course is limited by the availability of faculty, equipment, and classroom space for lecture, skill stations, and patient assessment testing stations. ITLS mandates that a student to faculty ratio be no more than 6:1.

What Must Be Taught in an ITLS Course?

See Lectures and Skill Stations in Chapter 1.

What Constitutes Course Completion?

A student may become an ITLS provider by attending the lectures and skill stations and by passing the written and practical examinations. ITLS providers will receive a card and/or certificate from the ITLS chapter or training centre confirming that they have satisfactorily completed the course. Certification is good for 3 years or whatever length is chosen by the ITLS program. Such certification does not guarantee future performance, nor is it a form of licensure of any kind. Students who fail either the written or the practical examination after retesting will be given

documentation of attendance so they may receive continuing education credit.

Students who successfully complete the written examination but are unable to pass the practical skills may receive a certificate of course completion, but not an ITLS card.

Recertification may be obtained by repeating the provider course or by taking an ITLS recertification course.

What is the ITLS Student Card Policy?

Students should receive ITLS cards as expeditiously as possible. Chapters and training centres need to ensure that students receive cards within 30 days of course completion when all fees have been paid.

All chapters and training centres must use ITLS-issued certification cards printed from the ITLS course management system (CMS). No other certification cards may be used. Chapters and training centres may, however, modify the course completion certificate for their unique needs.

What Are the Performance Criteria?

ITLS requires that two Instructors staff each testing station to evaluate student performance. One Instructor will run the scenario with the student, and the other will record the student's performance.

Performance criteria for the patient assessment test include the following:

Inadequate Rating

1. Disorganized assessment exams
2. Prolonged on-scene times in the setting of load-and-go situations
3. Critical actions missed (such as not stabilizing the neck)
4. Fatal errors made (such as poor cervical-spine management)
5. Causes death of the patient

Adequate Rating

1. Reasonable organization of assessment exams
2. Accurate identification of load-and-go situations
3. Abbreviated on-scene times for load-and-go situations
4. Performs all critical actions
5. No fatal errors made

Good Rating

1. Organized exams and solid overall performance
2. Interacts well with patient and team members
3. Performs all critical actions
4. Abbreviated on-scene times for load-and-go situations
5. Correctly performs or oversees performance of all critical interventions

Excellent Rating

1. Excellent organization of assessment exams
2. Excellent patient care
3. Interacts well with patient and team members
4. Directs the team well; displays leadership
5. Performs all critical actions
6. Abbreviated on-scene times for load-and-go situations
7. Demonstrates clear understanding of prehospital trauma assessment and management
8. Cooperative and supportive in the learning environment
9. Conveys attitude of interest and desire to help teach trauma assessment and management

What Are the Pass/Fail Criteria?

Students must attend all lectures and skill stations, obtain at least 74% on the written exam and at least “adequate” on the patient assessment test in order to pass the course.

What Is the Retest Policy?

Students who fail only the patient assessment skills test

- Will usually be retested on the same day (time permitting) or given the opportunity to retest within 6 weeks. If possible, the evaluator who initially rated the student as “inadequate” should not conduct the retest. Students may not retest in order to raise a passing grade.

Students who fail only the written test

- May not retake it immediately but will be given an opportunity to retest after having had time to review the material and study identified areas of weakness. The retest will usually be scheduled within 6 weeks. Students who pass the retest will pass the course. Students who fail the retest *may* be provided an opportunity to retake the course at no charge or for a reduced charge. Students may not retest in order to raise a passing grade.
- The written exam may not be modified in any way. Students should answer the exam questions to meet the ITLS curriculum.
- Students who fail the written test due to language or translation issues may work with an Instructor or Course Coordinator on site to determine if failure was due to language. If so, the Instructor may restate the failed question(s) in the student’s native language.

Students who fail both the written and the patient assessment test

- Will be asked to repeat the course.

What Does Certification Mean?

Certification as an ITLS provider or instructor means that the individual has passed an ITLS course taught by ITLS instructors under the sponsorship of the ITLS organization. It does not certify future performance, nor does it confer licensure of any kind.

How Does an ITLS Provider Maintain Certification?

ITLS providers may maintain their certification by taking an ITLS provider or recertification course every 3 years or whatever length is deemed appropriate by the chapter or training centre.

How Does an ITLS Instructor Maintain Certification?

ITLS instructors may maintain their instructor certification by successfully completing the ITLS online Instructor Update and satisfying the teaching requirements of the chapter or training centre. The chapter or training centre may not require additional educational sessions for recertification.

Where Do I Get the Pretest and Posttest?

Students should receive the course pretest and pretest answer key with their ITLS course manual at least 30 days prior to the course. The pretest is used as a teaching tool for course preparation. Posttests are only available to course coordinators in order to assure exam security.

PRECOURSE PLANNING**Scheduling an ITLS Course**

ITLS courses must be scheduled through the ITLS organization in your chapter or training centre. If you do not know how to contact this organization in your area, you may obtain information by calling or emailing:

International Trauma Life Support
3000 Woodcreek Drive, Suite 200
Downers Grove, IL 60515 U.S.A.
Phone inside U.S.: 1-888-495-ITLS
Phone outside U.S.: +1-630-495-6442
Fax: +1-630-495-6404
Email: info@itrauma.org
Internet: www.itrauma.org

The ITLS online bookstore contains the student manual and other ITLS products. ITLS instructor resources are available in the instructor section of the ITLS website.

Selecting a Course Coordinator

The course coordinator is the key to a successful program. This position requires someone who is organized and motivated because there is a considerable amount of work involved over several months. See Chapter 8 for the qualifications of a course coordinator.

Teamwork and communication are the keys to a successful ITLS course. The course coordinator must have a smooth working relationship and open communications with the course medical director and affiliate faculty, because it is teamwork that determines a successful outcome. Together they must select the site and the faculty for the course. These selections are made on the basis of availability and the time frame in which they are working. Usually, three months

are needed for the development of a course from beginning to end, with the last two weeks being the most intense.

ITLS requires that the course coordinator be on site during the course.

Selecting a Course Medical Director

The course medical director must be a physician ITLS instructor who is licensed to practice in the jurisdiction where the course is taught. A physician who is not already an ITLS instructor may co-direct a course with a physician ITLS instructor. The medical director must take overall responsibility for the quality of the course.

Each course must have a medical director who is available for consultation during the course. The course medical director acknowledges accountability by being familiar with all course content and ensuring the course is taught per guidelines of the chapter's or training centre's policy and procedures and ITLS International.

Each course must also have a designated affiliate faculty member on site to provide the necessary quality assurance, overall responsibility, and adherence to ITLS standards during the course.

The course medical director will chair the faculty meeting at the end of the course. If questions arise concerning grading, the vote of the majority of the faculty will prevail. The medical director will vote only in the case of a tie. If the medical director is not on site, the meeting may be chaired by the course coordinator or affiliate faculty member.

Selecting Faculty

The faculty for an ITLS course must consist of a course medical director, course coordinator, affiliate faculty member, and enough instructors to teach the number of students registered. It is advisable to have a multidisciplinary faculty involved with the course to provide a balanced presentation of the trauma team concept. You must have at least one affiliate faculty member on site at each course.

The number of instructors needed depends on the number of students: The patient assessment testing is one-on-one and requires many instructors in order to keep the length of the course reasonable. The number of instructors used in the lectures varies. Most courses divide the lectures among the instructors, but one instructor can do all of them, if necessary.

When selecting instructors, remember that some people are good at lectures, others are good at practical skills teaching, and a few are good at both. Try to make assignments that correspond to the instructors' abilities. Local faculty should be used whenever possible. The greatest cost involved in an ITLS course is the cost for out-of-town instructors. Many instructors serve without pay, but out-of-town instructors will usually expect to have their travel expenses paid. Although it is preferred to have the same instructors for both days, it is not absolutely necessary, as some faculty have only one day available.

Instructors should be consistent in their teaching methods. There are two ways to promote consistency. One way is to cover all of the normal inconsistencies in the instructor meeting prior to the course. The other is to monitor each lecture and skill station to catch inconsistencies.

During the selection of instructors, you must ensure that at least four of your instructors are very good at patient assessment demonstrations. One way to ensure this is to have those particular instructors demonstrate their skills to the coordinator prior to the course.

Selecting Models

Most ITLS courses use live models for skills stations and testing. Mannequins and patient simulators may also be used.

Because both acting ability and hard work are required of the models, use your best judgment when selecting them. They will be required to submit to being examined, handled, extricated, splinted, and strapped for several hours. Whenever possible, they should be compensated for their efforts. However, some students enjoy the opportunity and may be able to get school credit for serving as a model. Models should be advised in advance of the course that they will always have their chests examined. All models should be furnished with old clothes or asked to wear clothes that they do not mind having ruined (it is a good idea to have clothes made up with VELCRO fasteners so they can be pulled apart for exam and then easily stuck back together). Females should be advised to wear bathing suits or other suitable attire under their clothes. Because the models will learn a lot about trauma care, EMTs or EMT students may be used for this role. Students enrolled in the ITLS course should not be used for models except for minor skills such as traction splinting or helmet removal. The weight and age of a model should be a consideration. Models that are too heavy may cause injuries to your students, and models that are too young may have too short an attention span to last through a scenario.

Selecting the Site

Selection of the appropriate site is the responsibility of the course coordinator and medical director. They should inspect the facility to determine the adequacy of the following:

1. Large lecture room to accommodate both students and faculty. The standard ratio for a classroom is one person per 15 square feet. In other words, a 750-square-foot classroom would comfortably fit 50 people.
2. An adequate number of tables and chairs for students and faculty.
3. Find out how many windows are in the classroom. If there are windows, they will need to have shades so the slides projected on a screen can be seen.
4. The room should be adequately ventilated, heated and cooled.
5. Sufficient number of rooms or spaces to accommodate students, faculty, and equipment for skill stations. You will need at least one room or space for each skill station. Plan carefully; some stations require more space due to the amount of equipment. Some stations will require tables, whereas others will require an open space. These rooms must be available prior to the start of skill stations to allow equipment to be set up.

Note: These rooms or spaces should be close enough to each other to allow timely rotations, but far enough from each other so that activity in one station does not distract students in another station. Careful selection of rooms can help prevent students from meandering through the halls of the building and pausing to socialize.

6. Sufficient number of rooms or spaces with open space to accommodate students, faculty, and equipment for patient assessment scenarios. You will need at least one room or space for each group of three students. These rooms must be available prior to the start of skill stations to allow equipment to be set up.

Note: These rooms or spaces should be close enough to each other to allow timely rotations, but far enough from each other so that activity in one station does not distract students in another station. Careful selection of rooms can help prevent students from meandering through the halls of the building and pausing to socialize.

7. A room or space that can be secured that is large enough to gather and store equipment while it is not being used in skill stations.
8. Privacy, which will prevent distractions to the students and shock to the casual passersby. ITLS courses have been successfully taught in hotels, churches, hospitals, community colleges, scout camps, and EMS training facilities. If you are teaching at a facility with which you are not familiar, you should inspect the site, if possible. Be sure that students and faculty get a map of the location with their precourse materials. You will also need the name of a responsible contact person for the facility.

Meals

ITLS is an intensive learning course and convenient on-site lunches are recommended in order to save time. The advantages of on-site meals include the following:

- They keep the students in contact with other students and faculty to foster the sharing of professional experience.
- They keep the students in close proximity to the course for easier coordination.
- They keep the amount of lost time to a minimum by eliminating students' waiting time and travel time.

The disadvantages of on-site meals are as follows:

- Increased course registration fees to cover the cost of meals.
- Inability to satisfy everyone's tastes.

On-site meals need to be cost-effective and simple. Allowing the students to wander to restaurants and stand in line to be served is a hindrance to course completion, but at times it is necessary. If you cannot provide on-site meals, you should provide specific directions or maps to nearby restaurants.

Course Budget

One of the earliest tasks for the course coordinator is to establish the course budget. This needs to be one of the first considerations in planning a course because the course fee needs to be set early. Several factors to be considered in a budget include:

1. Site rental if necessary
2. Mailings – hard copy or electronic
 - a. Precourse advertising
 - b. Faculty invitation letters
 - c. Faculty precourse mailings
 - d. Student precourse mailings
 - e. Student/faculty postcourse mailings
3. Student manuals
4. Lunches for students, faculty, and models
5. Coffee, beverages, and/or snacks during breaks for students, faculty, and models
6. Faculty stipends (if offered)
7. Faculty travel and lodging (if necessary)
8. Chapter/ITLS International assessment fees
9. Equipment
10. Miscellaneous
 - a. Postage
 - b. Photocopying
 - c. Envelopes, paper, name tags, markers, and so on

Instructor-Ready Books

These books help decrease the confusion in coordinating an ITLS course. The books are made in inexpensive three-ring binders. There is only one book per lecture, per skill station, and per testing scenario. Initially, building this bank of books takes a bit of work. You will need to do a lot of copying the first time you make them, but doing so will save you a lot of copying in future courses. You must keep track of these books, collecting and storing them between each course. As an alternative, the books can be produced as electronic files and stored on a tablet or laptop.

Lecture Book: The following items are placed permanently in each lecture book:

1. A copy of the assigned lecture
2. Chapter objectives and key lecture points from Chapter 6 of the instructor guide
3. Printout or electronic file of PowerPoint slides for the lecture

At the beginning of the book, the following items are changed per course:

- The letter of what is expected from instructors
- Location and map
- Class schedule

Skill Station Book: The following items are placed permanently in each skill station book:

1. A copy of the skills criteria from the student manual
2. A copy of the skills criteria from the instructor's guide
3. A list of equipment required for that particular skill station

At the beginning of the book, the following items are changed per course:

- The letter of what is expected from instructors
- Location and map
- Class schedule

Testing Scenario Book: The following are placed permanently in each testing scenario book:

1. Four copies of the scenario
 - a. One for the instructor
 - b. One for the moulage technician
 - c. One for the model
 - d. One to stay in the book if the others are lost
2. Ten scenario testing check-off sheets (some prefer different-colored sheets for practice and testing)

The books should be numbered 1 through 10 (or however many are chosen), corresponding to the scenarios in the instructor guide.

Some courses use a pop-up display of the ITLS survey as a teaching tool in the skill stations. A template is available from the ITLS International office.

Delegating Tasks

Staff support is needed in the following areas:

Correspondence: An efficient and organized course assistant is invaluable in this area. Several mailings and course rosters are involved. The assistant will create course rosters and send participant and faculty confirmation notices. There are also many schedules and rosters that must be sent to both faculty and students. The assistant must be proficient using the ITLS course management system (CMS).

Equipment manager: One person should be assigned the task of securing, organizing, cleaning and inventorying the equipment. This is especially true at the end of the course when everyone is tired and ready to go home. If one person does not take responsibility for getting equipment cleaned, repaired, packaged, and returned, there will be equipment missing.

Timekeeper during the skill stations: There is a very tight schedule during the skill stations. There are only 30 minutes in which to practice a skill, prepare the room for the next group, and mobilize the present group toward their next station. One person should be delegated to notify each instructor 5 minutes before the end of the teaching period. This person, usually the coordinator, should then notify each instructor when the period is over. Unless monitored closely, skill stations tend to run overtime, with resultant schedule disruption and confusion.

Models: One person should be responsible for recruiting models for the skill stations and patient assessment. This same person should coordinate makeup (moulage) of the models. Models should arrive at the course at least 2 hours ahead of time in order to have their makeup ap-

plied. Failure to do this will result in a delay of the skills session and may cause a late finish on the day. The use of mannequins is also acceptable.

Makeup (moulage): At least two people should be assigned the task of applying makeup and moulage to the models. They should be reminded that *simpler is better*. Complex moulage often falls off after the first session. The commercial rubber moulage is not as realistic but is very durable. Using a felt-tip pen to simply draw and label the injury (onto a piece of white tape that is stuck to the affected part) is also acceptable. The moulage coordinator should be prepared to make the rounds during the course to maintain the victims' moulage. Please see Appendix B – Moulage for detailed instructions on creating realistic moulage.

MASTER CHECKLIST

Three Months Before the Course

1. Select the target group of students with the course director.
2. Decide whether you are going to teach any optional material; if so, students and instructors must be notified early so they are prepared (see Frequently Asked Questions).
3. Select the site and date.
4. Enter the course into the ITLS course management system (CMS).
5. Make initial faculty contact.
6. Establish a tentative budget for your course.
7. Once the course is approved, send invitations/brochures to the target group of students.
8. Appoint an equipment manager and take an inventory of the on-site equipment. Determine the needed equipment from the lists in the skill stations and patient assessment stations. Make initial contact for outside sources of equipment.
9. Visit the site and confirm dates. Order the menu for the meals, and arrange for refreshments at the breaks.

Two Months Before the Course

1. Reserve faculty and staff hotel rooms to determine the adequacy of the accommodations. An evening meeting place at the hotel for the visiting faculty is advantageous. If lodging is some distance away from the course site, maps should be provided.
2. Order the student manuals from the International office bookstore at www.itrauma.org.
3. Send faculty acknowledgment letters with course dates and request confirmation. To avoid misunderstanding, the introductory letter should state whether the faculty members are performing gratis, for reimbursement of expenses, or for a stated honorarium and reimbursement of some or all expenses.
4. Decide whether you wish to sell and/or distribute specialty items (T-shirts, pins, etc.). Items can be ordered from the ITLS bookstore at www.itrauma.org.

One Month Before the Course

1. Prepare the faculty roster and assignments.
2. Send faculty precourse letter. The following items should be sent to each faculty member:
 - a. Acknowledgement letter.
 - b. Copy of PowerPoint slides for assigned lectures.
 - c. Agenda for lectures and practical sessions.
 - d. Location and floor plan of the facility where the course will be taught.
 - e. Faculty assignments for lecture, skill stations, and patient assessment stations.
 - f. Registration forms for hotel accommodations (if applicable).
3. Confirm all hotel reservations.
4. Enter student data into the CMS course roster as candidates apply.
5. Prepare and mail acknowledgments to registrants. Include a precourse study packet as follows:
 - a. Student manual (unless the students have already purchased them).
 - b. Pretest and answer key.
 - c. Tentative course schedule with a list of any optional skills to be taught. Make it clear to the students that they do not have to be responsible for optional skills that are not to be covered in a particular course.
 - d. Map of course location that includes area hotels.
 - e. A copy of the Students' Guide to ITLS section of the instructor guide (see Chapter 9) or a similar prepared handout.
6. Check the available equipment with the equipment manager. Verify where the remainder of the equipment is to be obtained and who is transporting it.
7. Recruit models with the moulage coordinator.

Two Weeks Before the Course

1. Prepare the final student roster.
2. Meet with the course director to check the following:
 - a. Final schedule.
 - b. Equipment.
 - c. Facility.
3. Prepare candidate packets:
 - a. Welcome letter.
 - b. Group assignments.
 - c. Final agenda.
 - d. Rotation schedules.
 - e. Faculty roster—with email addresses if provided.
 - f. Student roster—with email addresses if provided.
 - g. Name tags.
4. Make a final site visit:
 - a. Confirm breaks and meals with caterers.
 - b. Check rooming lists.
 - c. Plan the layout of the rooms for skill stations and patient assessment stations.

- d. Make arrangements to open the doors at least two hours prior to the course in order to organize the equipment staging area and make coffee.
5. Send confirmation letter to models. Specify clothing to wear, reimbursement, meeting place, and times.
6. Photocopy the necessary pages from the instructor guide to include:
 - a. Pages relevant to each instructor's skill station.
 - b. Pages relevant to each instructor's patient assessment station.
 - c. Posttest and answer sheet for each student (with extras). This will come from the ITLS chapter/training centre office.
 - d. Patient assessment grade sheets (10 to 15 copies for each station).
 - e. Equipment list for each skill station and patient assessment station with the numbers of the skill station and patient assessment station to be taped to the door for the equipment manager.
 - f. Various forms (such as the student course evaluation form and the affiliate faculty course evaluation form).
7. If you plan to photograph the students for identification, have a digital camera or smartphone available.

One Day Before the Course

1. Take all equipment to the staging area of the facility. Inventory and properly label it. Secure the area.
2. Set up, inventory, and check all audiovisual equipment. You need a laptop, projector and may need other items such as a screen, extension cord, remote control with extension, and microphone for soft-voiced speakers if the size of the room requires it.
3. At the precourse faculty meeting, give the faculty members their packets. Include an agenda, station locations, selected scenarios, assignments, and final roster. Review the plan for the course, including the following:
 - a. Meals and meetings.
 - b. Final agenda with changes noted.
 - c. Student registrants, reviewing backgrounds (prehospital, nursing, industrial, military).
 - d. Plan for management of equipment.
 - e. Skill stations.
 - f. Grading criteria and retest policy for patient assessment.
 - g. Ground rules for student team member roles.
 - h. Plan for setting up skill stations and distribution of equipment.

First Day of the Course

1. Arrive early with the equipment manager and moulage coordinator. Verify thermostat settings, posting of outside signs, room assignments, equipment distribution, and model preparation.
2. Verify proper functioning of audiovisual equipment, and set up registration desk.
3. Register participants, and collect their pretests.
4. Take photographs, if possible, to assist in identifying students during the course and at

the closing faculty meeting. At the postcourse faculty meeting, the students should be discussed in the order that they appear on the photos. If you decide to use this method, explain to the students that the only purpose of the photos is to help the faculty identify the students.

5. Line up the lecturers; introduce the first speaker, make sure the second one is ready, and so on. If a scheduled lecturer does not show up on time, you may substitute another lecture (it is a good idea to ask all lecturers to be present at the beginning of the course) or have one of the other faculty members present give the scheduled lecture.
6. During the morning lecture session, the other faculty members should set up their skill stations and inventory their equipment. It is best to do this the night before, but providing equipment security often prevents this.
7. Check to be sure that the models arrive in time to be moulaged before the patient assessment skill stations.
8. Have a brief faculty meeting to review goals and procedures before beginning the skill stations. This may be done during lunch, but it is better for the faculty to have lunch with the students. Students are much more likely to ask questions of the faculty at this time.
9. Assign someone to notify each instructor 5 minutes before the end of each skill station teaching period. This person should then notify each instructor when the period is over. You must keep the stations on time. Any station that runs over its scheduled time will delay the whole schedule.
10. Enlist the support of the faculty to tear down the skill stations and distribute the equipment to the patient assessment stations. Extra equipment should be stored in the equipment staging area. Maintaining equipment security may prevent you from distributing equipment until the second day.

Second Day of the Course

1. Arrive early with the equipment manager and moulage coordinator. Confirm the room assignments, verify the functioning of the audiovisual equipment, and make the coffee.
2. Greet the students, correct any registration deficiencies from the first day, and make sure that all student data is entered into CMS.
3. Line up the lecturers; introduce the first speaker, make sure the second one is ready, and so on.
4. Direct the moulage coordinator to take charge of the models and their moulage.
5. Have faculty members set up their patient assessment stations and inventory their equipment.
6. Verify that the written-examination room is set up with answer sheets and pencils. A monitor should be assigned to the room. The monitor should grade tests immediately.
7. Verify that the instructors close their stations for lunch and that food is offered to the models. A secluded classroom for the models is appropriate.
8. Set up a collection area during testing. Collect the patient assessment evaluations and collate them with the written tests and photographs.
9. Arrange with a testing instructor, student, and course director for the retest of students who fail their practical test.

10. See that course evaluation forms are available for the students to fill out before they leave.
11. Direct the instructors and the equipment manager to break down the patient assessment stations. Bring all of the equipment to the staging area. The equipment manager should stay at the staging area to verify that the equipment, which is leaving the area, is going with the appropriate person. Borrowed equipment should be cleaned and repaired before returning.
12. Arrange for the postcourse faculty meeting:
 - a. Have available the collated student records for the faculty to review.
 - b. Appoint a recorder to document the results of the written exam, practical practice, practical test, practical retest (if any), and final faculty decision, using the form provided.
 - c. Collect comments from the faculty about the course and teaching material.
 - d. Distribute the faculty stipends (if any).
 - e. Pay the models (unless other arrangements have been made).
13. Verify with the equipment manager that the equipment has been distributed to the appropriate departing faculty.
14. Prepare and distribute the following to those students who have waited in order to get their grades immediately:
 - a. Participant scores.
 - b. ITLS cards and certificates.
 - c. Letter of attendance.

One Day After the Course

Take a breather for a job well done.

One Week After the Course

1. Prepare and mail, if not distributed at the close of the course, the following:
 - a. ITLS cards—It is your (and the chapter/training centre's) responsibility to see that the students get their cards in a timely manner. The day of the course is preferred, but when course fees have been paid, students must receive their cards within 30 days.
 - b. Letters of attendance (for students who failed the course).
 - c. Thank-you letter to faculty.
2. Check all invoices and bills prior to payment. Make a course financial statement.
3. Hold a staff critique.
4. Enter all course data into the ITLS course management system (CMS).
5. Remit course fees to the chapter/training centre office. In some chapters/training centres, course coordinators are not authorized to print ITLS cards until fees have been paid.
6. Inventory, clean, repair, and return all equipment to the proper local facilities. Thank all individuals who provided support for the course.

EQUIPMENT

Whenever possible, equipment used in the course should match equipment regularly used by the students taking the course. For example, when teaching IO insertion, it is better to use the actual product the students regularly use than teach them on a device they may never see. Equipment should be assessed and inventoried 2 to 3 weeks prior to the course. When borrowing equipment, the equipment manager (see Delegating Tasks, earlier in this chapter) should use a detailed checklist to see that *all* equipment is properly identified as to ownership and condition. Both before and after the course, it is advantageous to have staging areas, where equipment is grouped by source. These areas should have limited access and should be used to inventory and label equipment carefully. Any borrowed equipment should be returned clean and in good repair. This step is often neglected at the close of the course because of the fatigue and the natural urge to “wrap it up and go home.” The equipment list is lengthy, and a great deal of time is required for determining needs and inventory. Equipment needs will vary from course to course, depending on the number of students and the patient assessment situations chosen. There is an equipment list with each skill station. A master equipment list follows, although there is always some variation in equipment needs depending on the assessment scenarios chosen. Though not listed, a large coffeepot is an essential item.

The following are common sources for equipment:

1. Regional EMS offices.
2. Local EMT training departments.
3. Hospitals.
4. Prehospital provider services.

Master Equipment List

The amount of equipment needed for the second day of the course will depend on how many patient assessment scenario stations are being used. To determine your equipment needs, list the total of the equipment that is required for the patient assessment scenario stations you intend to include in the course. Check this list against the amount of equipment needed for the first day. You will usually need more backboards, oxygen masks, bag-valve devices, blood pressure (BP) cuffs, stethoscopes, and trauma boxes. Assess and inventory the complete equipment list 2 to 3 weeks prior to the course.

The following master equipment list is itemized by category. It covers equipment needed for the core skill stations the first day but not the patient assessment scenarios (each has its own equipment list) the second day. In addition, if you are teaching optional skills, you will need the equipment for those stations. The equipment required for these stations can be found in the optional skill station information in Chapter 10.

Information below is based on maximum student to instructor ratio of 6:1.

Station	Item	Quantity
Skill Station 1 – Assessment Skills		
	Exam gloves (non-latex, multiple sizes)	1 box each
	Monitor-defibrillator	1
	Live model	1
	Adult bag-valve device/reservoir	2
	Rigid cervical collar (size to fit your model)	2
	Long backboard with straps	2
	Head immobilization device	2
	Padding	2
	Trauma box or “jump kit” (materials below)	
	Each trauma box should contain the following:	
	• Stethoscope	1
	• Blood pressure cuff	1
	• Pocket mask	1
	• 4-inch elastic wrap (ACE)	4
	• 6-inch elastic wrap (ACE)	2
	• Gauze rolls	4
	• 4 × 4 gauze pads (unsterile)	20
	• Wide adhesive tape	1 roll
	• One-inch adhesive tape	3 rolls
	• Oxygen mask and nasal prongs	1 each
Skill Station 2 – Airway Skills		
	Exam gloves (multiple sizes)	1 box
	Goggles/face shield	2
	Advanced airway mannequin, adult	2
	Advanced airway mannequin, pediatric	2
	Mannequin head/shoulder elevation (e.g., towel)	2
	Airway lubricant	1
	Portable suction machine with flush and charger	2
	Manual suction device (optional)	2
	Tonsil tip	2
	Suction tubes (14–18 Fr.)	2
	Tongue blades	10
	Oropharyngeal airways (adult and peds sets)	2
	Nasopharyngeal airways (adult and peds sets)	2
	Adult bag-valve device/reservoir	2
	Pediatric bag-valve device/reservoir	2
	Adult face mask (#4–5)	2
	Pediatric face mask (#1–3)	2
	Oxygen cylinder with regulator	2
	Stand for oxygen cylinder	2

Oxygen tubing	2
Nasal cannula	2
Nonrebreather mask	2
Pulse oximeter	1
Stethoscope	2
Endotracheal tubes (7–9)	2 ea.
Endotracheal tube (3.5 Fr.)	2
Stylet (adult, pediatric)	2 ea.
Lighted stylet (optional)	1
10-cc syringe	2
Blind insertion airway device (BIAD)	2
Laryngoscope	2
Spare batteries	4
Curved blades (#3–4)	2 ea.
Straight blades (#1–4)	2 ea.
Spare bulbs	1 ea.
Waveform end-tidal CO ₂ monitor	1
Colorimetric CO ₂ detector (optional)	1
Esophageal detection device (optional)	2

Skill Station 3—Thoracic Trauma Skills

Chest decompression mannequin (anterior and lateral approach)	1
Artificial tension pneumothorax	1
Material below to build if a mannequin is not available	
Section of pork ribs at least 12 × 12 inches	1
Small trailer wheel inner tube	1
Valve core remover	1
Hand, foot, or electric air pump	1
8-fluid-ounce bottle of tire puncture sealer	2
Roll of plastic wrap	1
Roll of duct tape or foam latex tape	1
One-way valve	1
Asherman Chest Seal (optional)	1
Flutter valve #1	2
Flutter valve #2	20
Plastic 10-cc syringe	2
Penrose drain	2
10-cc syringe	6
14-gauge over-the-needle catheters	18
Paper towels	2 rolls

Skill Station 4—Vascular Access Skills

Exam gloves (non-latex, multiple sizes)	1 box each
IO mannequin	2

Chest decompression mannequin (anterior/lateral approach)	2
One-way valve (chest seal)	1
10-cc syringe	6
14-, 18-, and 20-gauge over-the-needle catheters	18 ea.
Paper towels	2 rolls
Intraosseous needles	6

Skill Station 5— Spine Management Skills/Patient Transfer

Exam gloves (non-latex, multiple sizes)	1 box each
Live model	1
Rigid cervical collar (assorted sizes or adjustable)	2 ea.
Long backboard with four (4) nine foot straps	1
Scoop stretcher or Reeves sleeve	1
Head or cervical immobilization device	1
KED or similar vest-type extrication device	1
Elastic wrap (ACE)	1
Chair	4
Vehicle (optional)	1 or 2
Head or cervical immobilization device	1
Padding	1
Tape	4 rolls
Elastic wrap (ACE)	1
Motorcycle helmet (full face)	1
Football helmet with face protector	1
Shoulder pads	1 set
Open face helmet	1

Skill Station 6—Extremity Skills

Live model	2
Padding	2
Tape	1
Padded long board splints (various sizes)	1
Thomas splint	1
Sager or Hare splint	1
Cravats	2

Miscellaneous

Clipboards	2
Pens	4
Moulage kit (see Chapter 9)	1
Spray bottles with glycerin-water mix	1
Cloth towels	4
Wide adhesive tape	2 rolls



SKILL STATION 1

ASSESSMENT SKILLS



SKILL STATION 2

AIRWAY SKILLS

SKILL STATION 3

THORACIC TRAUMA SKILLS

SKILL STATION 4

VASCULAR ACCESS SKILLS

SKILL STATION 5

SPINE MANAGEMENT SKILLS



SKILL STATION 6

EXTREMITY TRAUMA SKILLS



SKILL STATION 7

ASSESSMENT SKILLS



TESTING STATION

1



TESTING STATION

2



TESTING STATION

3



TESTING STATION

4



TESTING STATION

5



TESTING STATION

6



TESTING STATION

7



TESTING STATION

8



TESTING STATION

9



TESTING STATION

10

3

Teaching Strategies: Guide for Instructors

Roles and Responsibilities

The original Hippocratic Oath required the medical practitioner to swear to teach the art of medicine to others. This concept is still very important. Medicine is not just a trade or craft; it is an art, and we as practitioners must give something back to the art to continue to improve it. Teaching is a wonderful way to accomplish this. Teaching is extremely important in that our influence may pass from generation to generation, doing good or harm long after we are gone. Donating our precious free time to teach others how to save lives is one of the highest traditions of medicine.

ITLS instructors are responsible for knowing all of the ITLS material in order to present their assigned topic in a simple and easy-to-understand manner so that it ties in with the other parts of the ITLS course. It is just as important, whenever possible, for the instructors to remain available to the students to answer questions and provide individual help. This includes eating and socializing with the students. Often, students will not ask the questions they really want to ask until they know the instructor and feel confident that the instructor will not ridicule them. It is understood that there will be times that the instructors can be present only long enough to present their material, but, whenever possible, the instructors should be present for the entire course.

The ITLS curriculum is based upon the best available scientific evidence regarding the care of the trauma patient. Not every aspect of trauma care is supported by such evidence. When there is none available, ITLS relies on a consensus reached among trauma care professionals and educators from around the globe to guide care in those areas. The materials used in the course are reviewed regularly by the ITLS Editorial Board and updates and changes are made regularly to reflect the best practices in trauma care.

It is extremely important that when teaching the course, the instructor should teach the principles of patient assessment and management set forth by ITLS. If one teaches material that is in conflict with the text, the students may become confused. If you have concerns about the material, please contact your chapter affiliate faculty member or chapter medical director. Do not engage in debate about the course content during the course. If you do not agree with the material and approach put forth by ITLS, please do not agree to teach. Please do contact your chapter medical director with your concerns.

The goal of every ITLS instructor is to teach the student skills and knowledge to provide the best possible prehospital trauma care.

TEACHING METHODOLOGY

Learning is a relatively permanent change in behavior that comes about as a result of a planned experience. Teaching is a method of attaining this desired change. We are involved in teaching adults, many of whom are already practicing as EMTs, nurses, or physicians. There is a generational difference in how students like to receive their education. While older students may do better with the classic lecture format, many younger students are visual in their learning style and more technology focused. Regardless of their preferred style, to gain students' cooperation in the learning process, we must:

1. Convince them that there is a gap between the level at which they wish to perform and the level at which they are actually performing.
2. Help them to attain the desired level of performance.

To accomplish this, the learner must accept the performance goals as personal goals and accept a share of the responsibility for attaining those goals. It is almost impossible to teach something to someone who does not feel the need to know the material. Good instructors not only must know the material and how to explain it but also must be able to "sell" the "need to know" to the student. ITLS instructors should accept the philosophy that they are a team with the student, and their goal is to help every student attain the desired level of performance before the course is over. The practice of medicine is unique in that poor performance does not just lead to a poor product; it may result in the loss of life. We should consider our students as family and be willing to go the extra mile to help them learn. The instructor who takes pride in how many students fail has no business being in medicine or education.

Effective Teachers

1. Are polite
2. Are pleasant in their interactions
3. Call students by name
4. Give praise and positive feedback
5. Involve students in decision making
6. Do not ignore, belittle, or harass students
7. Make reasonable demands on students
8. Are businesslike and warm
9. Are knowledgeable about their subject
10. Use gestures and movement (are not "stiff")
11. Make few errors

In general, lectures are effective ways to transfer information but alone are less effective for ensuring long-term retention. Hands-on practice with a caring, interactive instructor is one of the best ways to ensure retention. Therefore, lectures must be succinct, to the point, and as free as possible of incorrect information. If the lecture runs over its appointed time frame, there is probably information presented that will not be remembered anyway.

Learning proceeds most smoothly when material is somewhat new or challenging yet relatively easy for the students to relate to their existing knowledge.

Presentation of Lectures

- *Make a good opening.* Use the opening to tell the students what you are going to discuss, why it is important to them, and what they should learn from the lecture.
- *Make a good presentation of the material.*
 - Avoid reading (slides or notes) or reciting; it is boring, and students will retain only 50% even with the best audiovisual aids.
 - Use a variety of styles (questions, thought-provoking statements, etc.) when you lecture:
 - What are the ABCs of trauma?
 - If a negative pressure inside the thorax accomplishes inspiration, what will happen if there is a gaping hole in the thorax?
 - If shock causes this catecholamine response, what symptoms should we look for in the shocky patient?
 - Why do we no longer hyperventilate the head injury patient?
 - What injuries would you expect in the patient who was just struck from the passenger's side of a motor vehicle?
 - Highlight the important points in your opening and closing remarks: "This is what we are going to discuss . . . this is what we are saying . . . this is what we just discussed."
 - Relate the (action) slides to your experiences and the experiences of the students:
 - This is the picture of the ankle of the man we picked up last week.
 - This is the sequence of slides of the fire truck crash shortly before we visited there.
 - This chest X-ray shows an injury just like the one in the patient you brought to the hospital last week.
 - Do not try to cover too many points. Teach key concepts.
- *Make a good closing.* Review the objectives that you outlined in your opening. Briefly bring everything together in a way that relates to those objectives.

Important Lecture Presentation Tools

- *Eye contact:*
 - Read your audience—get feedback.
 - Identify three to five students near the corners of the class and talk to them.
 - Occasionally speak to people who are not paying attention.
- *Movement:*
 - Do not get stuck behind the podium or audiovisual equipment.
 - Moving leisurely around the room keeps the students' attention, especially when getting close to them.
 - Avoid distracting the class with pacing, repetitive movements, or inappropriate wardrobe; they may spend more time looking at what you are doing or wearing than listening to what you are saying.

- *Voice:*
 - Avoid distractive, repetitive words (“uh,” “y’know,” “well,” “OK”).
 - Vary your voice tone, volume, and speed.
 - Communicate important points by emphasizing with voice quality.

Help the students pass the course.

SKILL STATIONS

Objective

Acquisition of the psychomotor skills necessary for the rapid assessment and treatment of the multiple trauma patient.

To Prepare

The skill stations are the heart of the course. Time should be used efficiently so that every student can become proficient in the procedures. The instructors must rehearse the station well, including with the model, if appropriate. The instructor must learn what equipment is needed and see that it is available and set up correctly beforehand. There are many optional skills included in the instructor guide. The students should be notified well in advance of the course which skills will be taught. (See the section in Chapter 2 titled “What Must Be Taught in an ITLS Course.”)

First review the skill station from the student’s perspective by reading the individual skill station in the student manual. Next review the skill station from the instructor’s perspective in Chapter 6 of the instructor guide. Do this before the course so that on the day of the course you can use your time setting up and practicing your station.

Use the skill station as a complement to the lectures and not to repeat the information already presented. Use the skill station as a preparatory step to the patient assessment stations by explaining what is to be expected of students in the application of the skills they are reviewing or learning. It is imperative that the instructor knows the content of the patient assessment stations.

Presenting a Skill Station

- Do not lecture at the skill station.
- Do present the objectives of the skill station.
- Demonstrate the skill and talk through the skill, have the students talk through the skill, and then have the students practice the skill to their and your satisfaction.
- Encourage comments and questions about the procedure while students are busy practicing the skill.
- Remain flexible. Offer comments and feedback in a caring and constructive fashion. Do not embarrass the student who has difficulty with the skill being taught.
- Coordinate responsibilities and expectations with the other instructor in the skill station.

- Allow as much time as possible for extra practice. Encourage the students to return at the end of the day if necessary. Give/offer extra help to those who may need it.

Help the students pass the course.

PATIENT ASSESSMENT SCENARIO PRACTICE AND TESTING

The ability to assess and manage trauma patients rapidly is the goal of the ITLS course. This time of practice, teaching, and then testing is extremely important.

1. Review teaching methodology.
2. Familiarize yourself with what the members of the team are allowed to do during practice and testing. Review the section titled “How to Function as a Team” (Chapter 9 of the instructor guide).
3. Review Chapters 2 and 3 in the student manual.
4. During the practice-teaching portion, use the full time allowed. Allow the students to proceed with as little interruption or prompting as possible. When they have finished, quickly critique their performance, show them how to do it correctly, and then allow them to practice as time permits. Take into account local law and protocol.
5. During the testing portion, you should not teach or prompt, and you should not discuss the scenario when the student finishes. Any questions are to be answered after the postcourse faculty meeting. As soon as one team finishes its test, you should immediately prepare for the next team’s testing. It is a long session; you must keep things moving.
6. You need two instructors for each assessment station. One instructor cannot interact with the team and grade at the same time. One instructor should present the patient scenario and interact with the team. The other instructor should keep time and fill out the grade sheet. When the practice or test is over, the two instructors should discuss the performance and assign a grade.
7. Fill out the grade sheet:
 - a. Write the team leader’s name and the scenario number at the top.
 - b. Mark whether it is a practice or test.
 - c. Record the pertinent times as indicated.
 - d. Check off each step as the team performs the assessment. Make pertinent notes and comments about problems or techniques (good and bad). Do not record unkind or jesting remarks; the students are allowed to review their grade sheets.
 - e. Review the critical actions; determine an overall grade; and document why the student received that grade.
 - f. Sign the grade sheet. It is important at the postcourse faculty meeting to know who graded each student (final grades may be raised on the basis of practice performance).

How to Present the Scenario to the Student

1. The scenario should be presented in the hall outside the room so that the scene does not distract the students.
2. Have the students introduce themselves and give their profession, level of training, and type of work. Use the appropriate setting (prehospital, occupational health/industrial, military) based on the students' background and work setting.
3. Remind students that they have medical direction available on the radio.
4. Remind students that this is an interactive scenario and that they must tell the instructor everything that they are doing, or you will assume that it was not done.
5. Ask students whether they have any questions.
6. Dispatch the call as it would be dispatched in a real situation.

Teaching versus Testing Formats

<i>Teaching</i>	<i>Testing</i>
<ul style="list-style-type: none">• Interact without obstructing education.• Imprint the ITLS method, but do not interrupt so often that you obstruct the learning process.• Reinforce the team concept.• Allow a longer time for each station.• Remind and guide students to:<ul style="list-style-type: none">○ Perform ongoing exam if patient worsens (and every 5 minutes during transport).○ Address critical care aspects.○ Splint all fractures, dress all wounds at the appropriate time.○ Do a detailed exam.○ Call medical direction.	<ul style="list-style-type: none">• Interact for vital signs and medical direction only.• Continue the team concept during testing.• Allow a shorter time for each station.• Avoid reminding students about patient care.• Test only!• Do not teach!• Do not prompt!• You must remain objective and consistent for all testing scenarios.

Patient Assessment Scenarios

Grading is done by way of individual grade sheets. The generic grade sheets have every step of the assessment listed in order followed by common critical actions and grading criteria. There is room for some variation in the order of the steps listed on the grade sheet. Do not become excessively rigid in this grading; no one (including you) will perform assessment exactly as listed on the grade sheet. You must look at the overall performance of the team leader as well as how well the team members assist and then assign a grade, taking into account the listed grading criteria and critical actions. It is important to write notes on the grade sheet to justify the grade that you assign, especially if you fail the student. Remember that patient assessment grading is subjective. If you become excessively rigid, no one will do well. You must look at the overall performance, not each individual action, when assigning a grade.

4

Case Scenarios: Teaching and Evaluation Stations

You may choose any of these patient assessment scenarios, or you may make up your own scenarios. If you make up your own scenarios, please send ITLS International copies, as it may want to include them in the next *Coordinator and Instructor Guide*.

Because the Glasgow coma scale (GCS) score is used in patient assessment, you must provide a copy of the GCS for the students to use when they practice and test (they are not expected to memorize it). A copy of the GCS is included at the end of Chapter 9 of the instructor guide.

While preparing for the station, spend time with the model who will be acting as the patient. Make sure models understand that they will be required to submit to being examined, handled, extricated, splinted, and strapped for several hours. Direct them to the furnished old clothes or verify that they are wearing clothes that they do not mind having ruined. Verify that models are wearing bathing suits or other suitable attire under their clothes. Consider the weight and age of the model for the scenario. Models that are too heavy may cause injuries to your students, and models that are too young may have too short an attention span to last through the scenario. If necessary, select a different scenario or ask the course coordinator to assign a different model to the scenario.

Review the setting, injuries, and patient instructions with the models. Discuss the level of “acting” you want them to display in their role as patients. Do they have any medical knowledge? If not, briefly explain the injuries so they better understand the behavior they should exhibit. Explain the history information, and give directions on how and when they are to provide the information. Agree on a signal that you will give them if you want a change in their behavior during the scenario (e.g., become unresponsive). Let them know that you may interject information into their performance if they forget anything or if there is an unexpected change in the scenario development.

Learning should easily transfer to real-life actions. Before you begin, make sure that all of the equipment required for your scenario is available in the station. Three settings are provided for each patient assessment scenario. Select the most appropriate setting for the team leader in your student group. To facilitate learning, please ensure that the scenario is as realistic as possible. Please see Appendix B – Moulage for detailed instructions on creating realistic moulage for scenarios.

It is imperative that you review and memorize the information relevant to the scenario you will be delivering. You need to respond quickly to student actions and requests for information to maximize the learning experience and minimize assessment time.

SCENARIO 1

Setting

EMS/Prehospital: You have been called to the scene of a domestic violence incident. A female has injuries not compatible with life. A male has also been shot and the police lead you over to him.

Occupational Health/Industrial: You have been called to the scene of the company president's administrative offices for a shooting incident. According to security, it is the president of the company and her husband who have been shot. The president has injuries not compatible with life. Security directs you to the president's husband.

Military: You are a dismounted medic and have been called to the scene of a shooting incident at a village elder's home. According to the QRF (Quick Reaction Force), the two patients are the village chief and his wife. The chief's wife has injuries not compatible with life. The MP (military police) leads you over to the village chief.

History

- S— Shortness of breath.
- A— Tetanus toxoid.
- M— None.
- P— None.
- L— 3 hours ago.
- E— GSW as described above.

Injuries

1. Sucking chest wound on right anterior chest from a gunshot wound.
2. Hemothorax.
3. Closed left lower leg fracture.
4. Shock.

Patient Instructions

You should be alert and having difficulty breathing. Complain of pain when your right chest or your lower left leg is examined.

Moulage Instructions

Sucking chest wound and bruises on the lower leg can be made as described in Chapter 9 on moulage techniques. As an alternative, you can simulate the injuries by placing white tape on the affected areas and writing the injury ("sucking chest wound" and "broken arm") with a felt-tip pen. Simulate shock.

Instructor Information

Scene size-up—The police have secured the scene. Police and fire are on scene and can assist. There is 1 patient.

Initial assessment

General impression— Patient is lying on side, conscious, with obvious dyspnea. Patient states “I ... can’t ... breathe.”

LOC— Alert.

Airway— Clear and open.

Breathing— Rapid, shallow and gasping respirations.

Ventilation instructions— Direct team to assist ventilations.

Circulation

Pulses— Rapid radial pulses present.

Bleeding— Spot of blood visible on Right anterior chest; no major bleeding.

Skin color, condition, and temperature— Cyanotic, cold and clammy.

Decision— Rapid Trauma Survey due to mechanism and initial assessment.

Rapid trauma survey

Head— No injuries noted.

Neck— No obvious injuries.

Trachea— Midline.

Neck veins— Flat neck veins.

Chest

Looking— Sucking chest wound on right anterior chest.

Feeling— Crepitus on right side.

Listening—No breath sounds on right side; heart tones normal.

Percussion— Dull on right side.

Abdomen— No injuries noted. Soft, non-tender.

Pelvis— Stable.

Extremities

Lower—Swelling, tenderness, deformity of left lower leg.

Upper—No injuries noted. Good distal PMS.

Exam of posterior— Normal. No exit wound is found.

History (obtain from the patient)

Neurological

LOC— Alert.

Pupils— Equal and reactive.

Sensory— Normal.

Motor— Normal.

GCS— 4/5/6 = 15.

Decision— Load and Go. Notify hospital immediately that you are en route with a patient with a gunshot wound to the right anterior chest and also a closed extremity fracture. Seal gunshot wound of chest; give oxygen; start two large-bore IVs, but run at rate to maintain a radial pulse.

Ongoing exam

Subjective changes— No changes.

Neurological

LOC— Alert.

Pupils— Both 5mm, equal and reactive.

GCS— 4/5/6=15.

Airway— Clear and open.

Breathing— Rapid, shallow, gasping respirations. Continue assisting ventilations.

Circulation

Blood pressure— Blood pressure 88/58.

Pulses— Rapid, weak radial pulses.

Skin color, condition, and temperature— Cyanotic, cool, clammy.

Neck—No changes.

Trachea— Midline.

Neck veins— Flat.

Chest— No changes.

Abdomen— No changes.

Focused assessment of injuries

1. Sucking wound.
2. Closed lower leg fracture.

Check interventions

Ensure ventilations still effective (Oxygen?)

Sucking wound sealed?

Splint fracture to lower leg?

Secondary survey

History and vital signs— No changes.

ETCO₂: 26 mmHg, waveform square

Neurological

LOC— Alert.

Pupils— Both 5mm, equal and reactive.

Sensory— No injuries noted.

Motor— No injuries noted.

GCS— 4/5/6= 15.

Finger-stick glucose— N/A.

Head— No injuries noted.

Airway— Clear and open.

Breathing— 38 and shallow if not assisted.

Neck—No injuries.

Trachea— Midline.

Neck veins— Flat.

Circulation—BP 88/58.

Pulses— Pulse 134, weak at radial.

Skin color, condition, and temperature— Cyanotic, cool, clammy.

Chest

Looking— Sucking chest wound sealed on right anterior chest.

Feeling— Crepitus felt on right side.

Listening— No breath sounds on right side. Heart tones normal.

Percussion— Dull on right side.

Abdomen— Soft, non-tender.

Pelvis— Stable.

Extremities

Lower— Closed left lower leg fracture. Stabilized by splint. Good distal PMS.

Upper— No injuries noted. Good distal PMS.

ITLS Scenario 1 - Gun Shot Wound (Dyspnea, Hemothorax, Extremity Injury)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	None. The police have secured the scene.
Number of Patients	One.
Need for more help or equipment	Police and fire are on scene and can assist.
Mechanism of Injury	You have been called to the scene of a shooting incident. A female has injuries not compatible with life. A male has also been shot and the police lead you over to him.



Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious Bleeding?	Pt. is found lying on side, conscious, with obvious dyspnea. Pt. states "I..... can't..... breathe".
LOC (AVPU)	Alert.
Delegate Spine	Direct team member to apply SMR.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Rapid, shallow, gasping respirations. Direct team to assist ventilations.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadly bleeding?	Rapid radial pulses present. Cyanotic, cold, clammy. Spot of blood visible on R anterior chest.



Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	No. No. No. No.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	No obvious injury. Midline. Flat neck veins. Direct team member to apply.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. Sucking chest wound on right anterior chest. Crepitus felt on right side. Direct team member to seal.
Breath Sounds (2 points)	No breath sounds on right side.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. No injuries noted. Soft, non-tender.
Pelvis (DCAP-BLS-TIC)	Stable.
Lower Extremities - DCAP-BLS-TIC - Distal PMS	Deformity of left lower leg. Stabilize. Good distal PMS.
Upper Extremities - DCAP-BLS-TIC - Distal PMS	No injuries noted. Good distal PMS.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Check posterior during roll onto board. No exit wound is found.
Notification	Notify hospital immediately. Notification should include that you are en route with the victim of a gunshot wound (GSW) to the right anterior chest. Ventilations are being assisted, the sucking chest wound has been sealed, and the patient also has a closed extremity fracture.



Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Alert.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Rapid, shallow, gasping respirations. Continue assisting ventilations.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Rapid, weak radial pulses. Cyanotic, cool, clammy.
Reassess Vital Signs	* In repeat ongoing assessments
Reassess Neck	No change.
Reassess Chest	No change.
Reassess Abdomen	No change.
Reassess interventions	Ensure ventilations still effective. Seal chest.



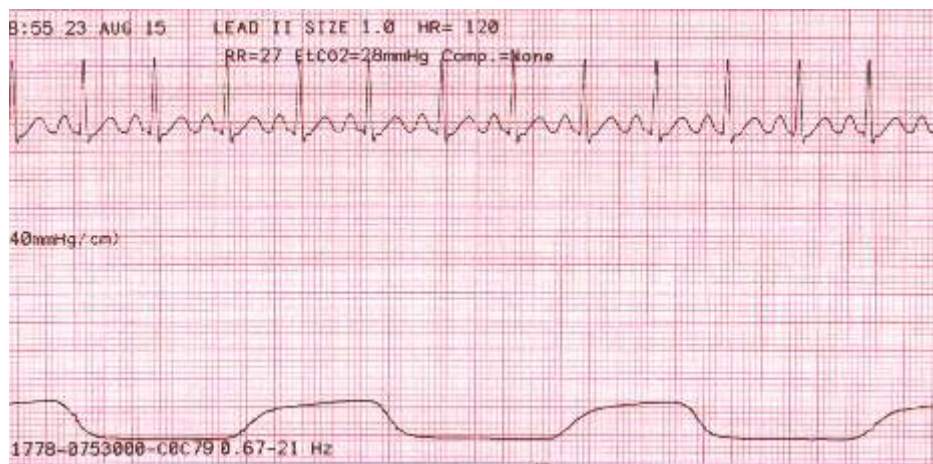
Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	SOB. Tetanus toxoid. None. None. 3 hours ago. GSW as described above.
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	88/58 134, weak at radial. 38 and shallow if not assisted. 26 Square 90% with O2 (if assisted). N/A. 4/5/6 = 15. Cyanotic, cool, clammy. Both 5mm, equal and reactive. Note: It is acceptable to initiate IV access at this time.
Head to Toe - Head - Neck - Chest - Breath sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	No injuries noted. No injuries. No tracheal shift or JVD. Sealed chest wound on right anterior chest No breath sounds on right side. Soft, non-tender. No injuries noted. Closed left lower leg fracture. Good distal PMS. No injuries noted. Good distal PMS.

SCENARIO 1 CAPNOGRAPH & ECG

Initial ETCO₂: 26

Waveform: Square

Since this is a hemothorax scenario (it is a perfusion problem), the waveform will be square throughout the scenario. The ETCO₂ corresponds with the MAP. As long as the patient is hypotensive, the ETCO₂ should be low. Care must be taken not to “hypoventilate” in an effort to raise the ETCO₂. A constant respiratory rate and depth is indicated. Only an increase in perfusion will increase the ETCO₂. In cases of shock, capnography is more a monitor of perfusion than it is ventilations.



ITLS SCENARIO 2

Setting

EMS/Prehospital: The patient is an unrestrained pregnant driver of a car that went off the road at 60 mph (96 kph) and hit a tree head on. The patient is still in the driver's seat.

Occupational Health/Industrial: You arrive on the scene of a commercial delivery truck and find the patient is an unrestrained pregnant driver that has hit a utility truck head-on at approximately 60 mph (96 kph).

Military: You are dispatched to an incident in front of the air base main gate. Upon arrival, you notice that it is a MVC (motor vehicle collision) between a logistical transport vehicle and a sedan. The unrestrained driver of the sedan is pregnant. The gate sentry states that the collision was head-on with an approximate speed of 60 mph (96 kph). The sedan bounced off the bollard.

History

S— "My hip hurts so bad! My chest and stomach too."

A— Penicillin.

M— Prenatal vitamins and Dilantin.

P— Epilepsy. 6 months pregnant.

L— 5 hours ago.

E— "I was driving down the road and woke up like this. I think I had a seizure."

Injuries

1. Posterior dislocation of left hip.
2. Fractured pelvis.
3. Shock.
4. Contusion of sternum.

Patient Instructions

You should be alert and complain of pain in the chest, abdomen, and left hip. When examined, you should complain of pain when the sternum or anterior ribs are palpated, when the pelvis is palpated, or when the left leg is moved in any way. Do not allow your left leg to be straightened. Scream at the top of your lungs at any attempt to straighten your left leg. Continually say, "I am pregnant—what about my baby?"

Moulage Instructions

Apply bruise to the sternum. Use one pillow to simulate pregnancy (unless model is actually pregnant). Simulate diaphoresis.

You can simulate the vehicle in the classroom with chairs.

Instructor Information

Scene size-up—No scene hazards. The vehicle is stable. Police and fire apparatus are on scene and can assist. There is 1 patient and she is still in the driver's seat.

Initial assessment

General impression— Potential for serious injuries. Patient is found sitting in the driver's seat of the vehicle, conscious, complaining that "my hip hurts so bad! I'm concerned about my baby! My chest and stomach hurt too."

LOC— Alert.

Delegate Spine — Direct team member to apply Spinal Motion Restriction (SMR).

Airway— Clear and open.

Breathing— Normal rate and quality.

Ventilation instructions— Direct team member to apply O₂.

Circulation

Pulses— Rapid radial pulses present.

Bleeding— No external bleeding.

Skin color, condition, and temperature— Normal, warm and dry.

Decision— Rapid Trauma Survey due to mechanism.

Rapid trauma survey

Head— No obvious injury.

Neck— Normal, non-tender. Direct team member to apply collar once checked.

Trachea— Midline.

Neck veins— Flat neck veins.

Chest

Looking— Contusion on sternum.

Feeling— Tender sternum, no instability.

Listening— Breath sounds present and equal. Heart tones normal.

Percussion— N/A.

Abdomen— Obvious late pregnancy. Distended and tender.

Pelvis— Pain on palpation. Unstable.

Extremities

Lower — Left leg flexed at hip and knee, internally rotated. Right leg normal. Stabilize. Good distal PMS.

Upper— No injuries detected. Good distal PMS.

Exam of posterior— Normal.

History (obtain from the patient)

Decision— Unstable. Load and Go. Notify hospital immediately that you have a conscious pregnant female involved in a high-speed motor vehicle collision, with chest, abdominal, hip and pelvis injuries.

Ongoing exam

Subjective changes— Patient complains of increasing abdominal pain.

Neurological

LOC— Alert.

Pupils— Equal and reactive

GCS— 4/5/6=15.

Airway— Clear and open.

Breathing— Normal rate and quality.

Circulation

Blood pressure— If no IV fluids: BP 98/60; if IV fluids: BP 100/60.

Pulses— Rapid, weak radial pulses.

Skin color, condition, and temperature— Pale, cool, clammy. * Deterioration.

Neck— No changes.

Trachea— Midline.

Neck veins— Flat.

Chest— Unchanged. Breath and heart sounds normal.

Abdomen—No change.

Focused assessment of injuries

1. **Contusion of sternum**— Monitoring heart.
2. **Posterior dislocation of hip**— Splinted.
3. **Fractured pelvis**— Stabilized in vehicle.
4. **Shock**— Fluid boluses.

Check interventions

Is oxygen hooked up and turned on?

Hip splinted in flexed position?

Are IVs running at correct rate?

Patient on backboard tilted to the left?

Cardiac monitor applied? Sinus tachycardia

Pulse oximeter applied? 100% saturation

Secondary survey

History and vital signs— BP 98/62, pulse 138, respiration 26. If given a bolus of IV fluids: BP 100/70, pulse 110, respiration 24.

ETCO₂: 28 mmHg, waveform square

Neurological

LOC— Alert and oriented.

Pupils— 4 mm, equal and reactive.

Sensory— Normal.

Motor— Normal.

GCS— 4/5/6= 15.

Finger-stick glucose— 6.5 mmol/l (105 mg/dl)

Head— No injuries noted.

Airway— Open.

Breathing— Normal rate and quality.

Neck— No tenderness or sign of trauma.

Trachea— Midline.

Neck veins— Flat.

Circulation— No external bleeding.

Chest

Looking— Unchanged.

Feeling—Sternal and anterior ribs tenderness.

Listening— Breath sounds still present and equal; heart sounds normal.

Percussion— Normal.

Abdomen— Distended. Pregnant. Increasing tenderness.

Pelvis— Do not reexamine.

Extremities

Upper— No injuries noted. Good distal PMS

Lower— Unchanged from above. Weak distal pulses, normal sensation, you cannot straighten left hip.

ITLS Scenario 2 – Motor Vehicle Collision (Pregnant Pt with Dislocated Hip, Fractured Pelvis, Chest Injury)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	None. The vehicle is stable.
Number of Patients	One.
Need for more help or equipment	Police and fire apparatus are on scene and can assist.
Mechanism of Injury	The patient is an unrestrained pregnant driver of a vehicle that went off the road at 60 mph (96 kph) and hit a tree head on. The patient is still in the driver's seat. ** Simulate vehicle in classroom with chairs.

Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious bleeding?	Pt. is found sitting in the driver's seat of the vehicle, conscious, complaining that "my hip hurts so bad! I'm concerned about my baby! My chest and stomach hurt too."
LOC (AVPU)	Alert.
Delegate Spine	Direct team member to apply Spinal Motion Restriction (SMR).
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Normal rate and quality. Direct team member to apply O2.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadily bleeding?	Rapid radial pulses present. Normal, warm and dry. No external bleeding.

Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	No obvious injury. No. No. No.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	No obvious injury. Midline. Flat neck veins. Direct team member to apply.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. Contusion on sternum. Tender, no instability.
Breath Sounds (2 points)	Present and equal.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. Obvious late pregnancy. Distended and tender.
Pelvis (DCAP-BLS-TIC)	Pain on palpation. Unstable.
Lower Extremities - DCAP-BLS-TIC - Distal PMS	Left leg flexed at hip and knee, internally rotated. Right leg normal. Stabilize. Good distal PMS.
Upper Extremities - DCAP-BLS-TIC - Distal PMS	No injuries detected. Good distal PMS.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Extricate patient onto board. Ensure posterior is checked during move.
Notification	Notify hospital immediately. Notification should include that you have a conscious pregnant female involved in a high speed MVC, with chest, abdominal, hip and pelvic injuries.

Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Alert.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Normal rate and quality.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Rapid, weak radial pulses. Pale, cool, clammy. * Deterioration.
Reassess Vital Signs	* In repeat ongoing assessments
Reassess Neck	No change.
Reassess Chest	No change.
Reassess Abdomen	No change.
Reassess interventions	Ensure immobilization still effective.

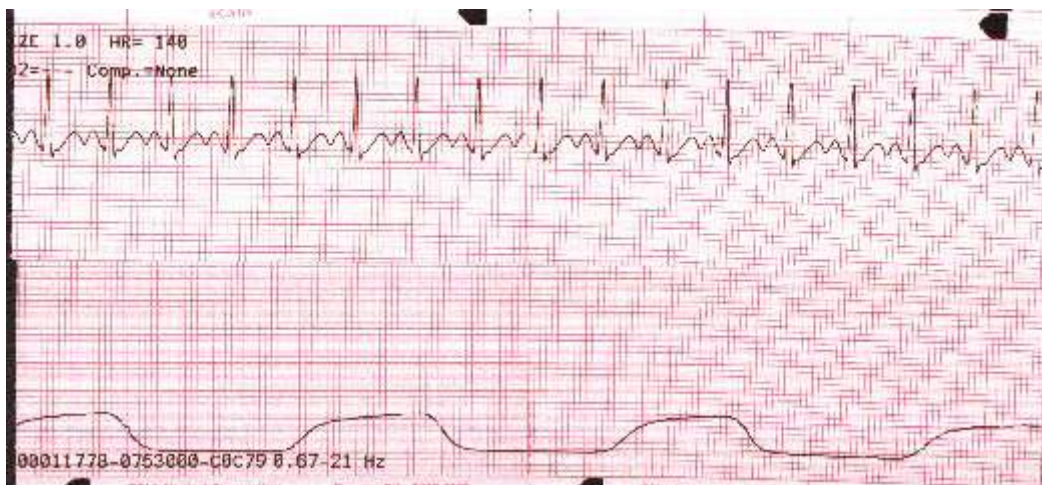
Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	"My hip hurts so bad! My chest and stomach too". Penicillin. Prenatal vitamins and Dilantin. Epilepsy. 6 months pregnant. 5 hours ago. "I was driving down the road and woke up like this. I think I had a seizure."
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	98/62 if no fluids given; 100/70 if fluids 138 if no fluids, 110 if fluids, weak at radial. 26, shallow but effective. 28 Square 98% with O2. N / A. 4/5/6 = 15. Pale, cool, clammy. Both 4mm, equal and reactive. Note: It is acceptable to initiate IV access at this time, and bolus if required.
Head to Toe - Head - Neck - Chest - Breath sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	No injuries noted. No injuries. No tracheal shift or JVD. Sternal and anterior rib tenderness. Breath sounds present and equal. Distended. Pregnant. Increasing tenderness. Do not reexamine. Unchanged from above. Good distal PMS. No injuries note. Good distal PMS.

SCENARIO 2 CAPNOGRAPH & ECG

Initial ETCO₂: 28

Waveform: Square

Since this is a hemothorax scenario (it is a perfusion problem) the waveform will be square throughout the scenario. The ETCO₂ corresponds with the MAP. As long as the patient is hypotensive, the ETCO₂ should be low. Care must be taken not to “hypoventilate” in an effort to raise the ETCO₂. A constant respiratory rate and depth is indicated. Only an increase in perfusion will increase the ETCO₂. In cases of shock, capnography is more a monitor of perfusion than it is ventilations.



SCENARIO 3

Setting

EMS/Prehospital: The patient was thrown from an All-Terrain Vehicle (ATV) that crashed into a tree at high speed. The patient is lying near the roadside on the grass.

Occupational Health/Industrial: You respond to a reported accident at a dairy farm/milk processing plant. On arrival, security informs you there has been an ATV accident in the fields next to the woods. The patient was thrown from an ATV that crashed into the woods at high speed.

Military: During a field exercise, you respond to a reported accident. On arrival, the platoon commander informs you that there has been an ATV rollover in the field next to the woods. The woods and field have been cleared and are approachable.

History

S— “My leg is killing me. Please help!”

A— None.

M— None.

P— None.

L— 2 hours ago.

E— “I lost control and hit a tree.”

Injuries

1. Open fracture of the right lower leg.
2. Fracture of pelvis.
3. Shock.

Patient Instructions

You should be alert and complain of pain in the right lower leg. When your pelvis is examined, you should cry out loudly with pain.

Moulage Instructions

A full-face or half-face helmet should be in place in all settings. Open fracture is best done with commercial strap-on moulage, but it can be made with wax or plumber’s putty and pieces of bone. Simulate diaphoresis.

Instructor Information

Scene size-up— The scene is safe and there is 1 patient. Police and fire apparatus are on scene and can assist.

Initial assessment

General impression— The patient is lying near the roadside on the grass, complaining of right leg pain. He is wearing a helmet and a small amount of blood is noted on the right leg.

LOC— Alert.

Delegate Spine— Direct team member to apply SMR. Remove helmet.

Airway— Clear and open.

Breathing— Normal rate and depth of ventilations.

Ventilation instructions— Direct team member to apply O₂.

Circulation

Pulses— Rapid radial pulse present.

Bleeding— Slight bleeding from right lower leg.

Skin color, condition, and temperature— Normal, warm and dry.

Decision— Rapid Trauma Survey due to mechanism.

Rapid trauma survey

Head— No sign of trauma (was wearing helmet).

Neck— No obvious injury. Direct team member to apply a collar once checked.

Trachea— Midline.

Neck veins— Flat.

Chest

Looking— No obvious injuries found.

Feeling— No TIC.

Listening— Breath sounds present and equal, normal heart sounds.

Percussion— Normal.

Abdomen— Slight tenderness of lower abdomen.

Pelvis— Unstable and tender. Stabilize.

Extremities

Upper— No injuries detected. Good distal PMS.

Lower— Open fracture of right lower leg with small amount of bleeding. Good distal PMS. Direct member to cover and stabilize.

Exam of posterior— Normal.

History (obtain from the patient)

Neurological

LOC— Alert.

Pupils— 4 mm, equal and reactive.

Sensory— Normal.

Motor— Normal.

GCS— 4/5/6= 15.

Decision— Load and Go (unstable pelvis); two IV lines; splint leg. (Strap legs together.)
Notify hospital immediately that you have a conscious patient with pelvis and lower extremity injuries that was thrown off an ATV at high speed.

Ongoing exam

Subjective changes— More tender in lower abdomen.

Initial assessment

LOC— Localizes to pain

Airway— Open and clear.

Breathing—20, good air movement.

Circulation

Pulses— Radial pulse present, rapid.

Skin color, condition, and temperature— Pale, cool, clammy. *Deterioration

History—SAMPLE, if not already done.

Vital signs— BP: 88/68

Neurological Exam

Pupils— Equal and reactive.

GCS—9.

Neck— No change.

Trachea— Midline.

Neck veins— Flat.

Chest— Unchanged. Breath and heart sounds normal.

Abdomen— More tender in lower abdomen.

Focused assessment of injuries

1. **Abdomen**— Still tender.
2. **Pelvis**— Not rechecked.
3. **Left femur fracture**— Splinted, still has good PMS, no bleeding now.

Check interventions

Is oxygen hooked up and turned on?

Dressing blood-soaked?

Are IVs running at correct rate to maintain BP of at least 90?

Splint in good position?

Secondary Survey

Subjective changes— No changes.

Initial assessment

LOC— Alert?

Airway— Open.

Breathing— 20, good air movement

Circulation— BP 88/68.

Pulses— 130, weak at radial.

Skin color, condition, and temperature— Pale, cool, clammy.

ETCO₂: 30, waveform square.

SPO₂: 98% with O₂.

History—SAMPLE, if not already done.

Neurological Exam

Pupils— 4 mm, equal and reactive.

Sensory—Normal.

Motor— Normal.

GCS— 4/5/6=15.

Detailed Exam

Head— No injuries noted.

Neck— No injuries.

Trachea— No tracheal shift.

Neck veins— No JVD.

Chest

Looking— No injuries detected.

Feeling— No injuries.

Listening— Breath and heart sounds normal.

Percussion—Normal.

Abdomen— Tender lower abdomen. No distention.

Pelvis— Do not reexamine.

Extremities

Lower— Unchanged from above. Good distal PMS.

Upper— No injuries noted. Good distal PMS.

ITLS Scenario 3 - All Terrain Vehicle (ATV) Collision and Rollover (Conscious Pt with Pelvis and Lower Extremity Injuries)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	None.
Number of Patients	One.
Need for more help or equipment	The police and fire apparatus are on scene and can assist.
Mechanism of Injury	The patient was thrown from an ATV that crashed into the woods at high speed. The patient is lying near the roadside on the grass.

Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious bleeding?	Pt. is found on side on the grass, complaining of right leg pain. The patient is wearing a helmet and a small amount of blood is noted on the right leg.
LOC (AVPU)	Alert.
Delegate Spine	Direct team member to apply SMR. Remove helmet.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Normal rate and depth of ventilations. Direct team member to apply O2.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadly bleeding?	Rapid radial pulse present. Normal, warm, and dry. Slight bleeding from right lower leg.

Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	No sign of trauma (was wearing helmet). No. No. No.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	No obvious injury. Midline. Flat neck veins. Direct team member to apply.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. No obvious injuries found.
Breath Sounds (2 points)	Present and equal.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. Slight tenderness of lower abdomen. None.
Pelvis (DCAP-BLS-TIC)	Unstable and tender. Stabilize.
Lower Extremities - DCAP-BLS-TIC - Distal PMS	Open fracture of right lower leg with small amount of bleeding. Good distal PMS. Direct member to cover and stabilize.
Upper Extremities - DCAP-BLS-TIC - Distal PMS	No injuries detected. Good distal PMS.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Direct member to strap legs together. Ensure posterior is checked during move.
Notification	Notify hospital immediately. Note that you have a conscious patient with pelvis and lower extremity injuries that was thrown off an ATV at high speed.

Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Localizes to pain.
Airway - Snoring? Gurgling? Stridor? Silence?	Open and clear.
Breathing - Rate, Depth, Effort	Normal rate and quality.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Radial pulse present, very rapid. Pale, cool, clammy. * Deterioration
Reassess Vital Signs	* In repeat ongoing assessments
Reassess Neck	No change.
Reassess Chest	No change.
Reassess Abdomen	More tender in lower abdomen.
Reassess interventions	N / A

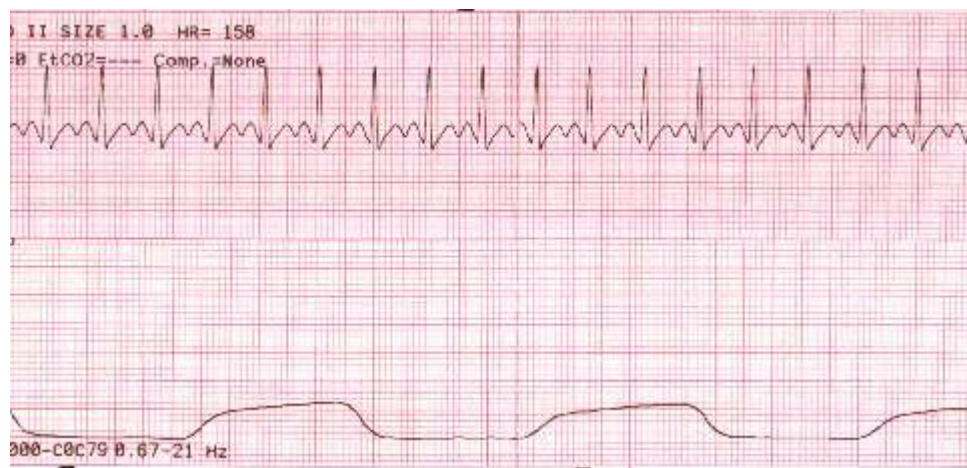
Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	"My leg is killing me. Please help!" None. None. None. 2 hours ago. "I lost control and hit a tree."
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	88/68. 162, weak at radial. 34, shallow but effective. 30 Square 98% with O2. N / A. 4/5/6 = 15. Pale, cool, clammy. 4mm, equal and reactive. Note: It is acceptable to initiate IV access at this time, and bolus if needed.
Head to Toe - Head - Neck - Chest - Breath sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	No injuries noted. No injuries. No tracheal shift or JVD. No injuries detected. Breath sounds present and equal. Tender lower abdomen. No distention. Do not reexamine. Unchanged from above. Good distal PMS. No injuries note. Good distal PMS.

SCENARIO 3 CAPNOGRAPH & ECG

Initial ETCO₂: 30

Waveform: Square

Since this is a perfusion problem, the waveform will be square throughout the scenario. The ETCO₂ corresponds with the mean arterial pressure (MAP). As long as the patient is hypotensive, the ETCO₂ should be low. Care must be taken not to “hypoventilate” in an effort to raise the ETCO₂. A constant respiratory rate and depth is indicated. Only an increase in perfusion will increase the ETCO₂. In cases of shock, capnography is more a monitor of perfusion than it is ventilations.



SCENARIO 4

Setting

EMS/Prehospital: A young male was struck while walking along the side of the road, by a vehicle travelling approximately 50 mph (80 kph).

Occupational Health/Industrial: A delivery truck left the factory about 5 minutes ago and is travelling approximately 50 mph (80 kph). The driver calls in to dispatch to report hearing a loud “thud” like he hit something. As he slows down and looks in his rear view mirror, he sees what appears to be a body in the road.

Military: While on a mounted patrol in armoured vehicles with hatches down, the lead vehicle reports hearing a loud “thud.” The middle vehicle then reports a “body” on the “road.”

History

S— “Can't breathe.”

A— Penicillin.

M— Insulin.

P— Diabetes.

L— Unknown.

E— “He drove right over me!”

Injuries

1. Tension pneumothorax on left side.
2. Intra-abdominal bleeding.
3. Fracture of the left femur.
4. Hypoglycemia.

Patient Instructions

You should be confused and disoriented. You are having difficulty breathing. Complain of pain when your abdomen is palpated or your left chest or upper left leg is examined.

Moulage Instructions

Apply contusions and abrasions on left chest and abdomen. Use pants with a large tear in the left thigh area. The left thigh should have a large bruise, or write “fractured femur” on a piece of white tape with a felt-tip pen and apply it to the left thigh. Apply some fake blood to an area of the scalp (fake blood mixed with K-Y Jelly works well here—do not use this on light-colored hair, as it will stain the hair). Simulate diaphoresis.

Instructor Information

Scene size-up— No scene hazards. You and your partner have arrived first on scene. Fire department is en route, and there is a first aid responder on scene. There is 1 patient.

Initial assessment

General impression— Patient is found lying semi-prone on his left side. His eyes are closed on approach and obvious respiratory distress is heard. No obvious major bleeding is observed.

LOC— Eyes open to verbal, patient appears confused.

Delegate Spine—Direct team member to apply SMR.

Airway— Clear and open.

Breathing— Rapid respirations with shallow air movement.

Ventilation instructions— Should order O₂ and ventilatory assistance.

Circulation

Pulses— Weak, rapid pulses at radial and carotid.

Bleeding— No major bleeding observed.

Skin color, condition, and temperature— Cyanotic, cool, clammy skin.

Decision— Rapid Trauma Survey due to mechanism and initial assessment.

Rapid Trauma Survey

Head— Matted blood in hair.

Neck— No injuries observed. Direct team member to apply collar once checked.

Trachea—Possibly tracheal deviation to right side.

Neck veins— Distended jugular veins.

Chest

Looking— Contusions on left side of chest.

Feeling— Crepitus and tender on palpation.

Listening— Decreased air entry on left side. Heart sounds—present but difficult to hear.

Percussion— Hyper-resonant if percussed.

Abdomen— Tender to palpate. Slight distention.

Pelvis— Nothing significant found.

Extremities

Lower— Left femur swelling, tenderness, deformity. Expose. Direct team member to stabilize if resources available.

Upper— No injuries noted.

Exam of posterior— No DCAP-BLS-TIC.

History (obtain from the patient).

Neurological

LOC—Confused and abusive, will not follow commands.

Pupils—Equal and reactive.

Sensory—Normal.

Motor—Normal.

GCS—3/4/5=12.

Finger-Stick Glucose—40mg/dl (2.4 mmol/l).

Decision—Load and go. Notify hospital immediately that patient is short of breath, with a tension pneumothorax requiring decompression. Consider immediate decompression of tension pneumothorax. (If not done, proceed as tension pneumothorax.) Splint left femur when in ambulance. Two IV lines. Glucose.

Ongoing Exam

Subjective changes— If given glucose, patient feels better now.

Initial assessment

LOC— Eyes open to verbal, patient appears more confused.

Airway— Clear and open.

Breathing— Rapid respirations with shallow air movement. Continue ventilations.

Circulation

Pulses— Radial pulses now absent. ** Change ** Carotid pulses still rapid and present.

Skin color, condition, and temperature— Cyanotic, cool, clammy skin.

History—SAMPLE, if not already done.

Vital Signs. Blood pressure 110/70 if decompression and fluid bolus. If not resolved, 70/40.

Neurological Exam

Pupils— Equal and reactive.

GCS— 3/4/5=12.

Neck—

Trachea— Visible tracheal deviation to right side.

Neck veins— Increased jugular vein distention.

Chest— Absent air entry on left side.

Abdomen— No changes.

Focused assessment of injuries

1. **Scalp**— No further bleeding.
2. **Pneumothorax**— As above.
3. **Abdomen**— As above.
4. **Left femur fracture**— Good PMS.

Check interventions

Is oxygen hooked up and turned on?

Decompression needle still patent?

Are IVs running? Rate?

Traction splint on left leg? PMS still OK?

Cardiac monitor applied?

Pulse oximeter applied? 92% saturation.

Secondary Survey

Subjective changes— If pneumothorax decompressed, patient feels better now.

Initial assessment

LOC— Still confused and abusive, will not follow commands.

Airway— Open and clear.

Breathing— Improved movement of air if tension pneumothorax has been decompressed; otherwise, worsening respiration.

Circulation (if not decompressed)

Pulses— Radial pulses now absent. Carotid pulses still rapid and present.

Skin color, condition, and temperature— Cyanotic, cool, clammy skin.

History—SAMPLE, if not already done.

Vital Signs: BP 90/50. BP 70/40 if not decompressed.

ETCO₂: 22, waveform square.

SPO₂: 91% (assisted ventilations).

Neurological Exam

Pupils— Equal and reactive.

Sensory— Normal.

Motor— Normal.

GCS— 3/4/5=12.

Finger-stick glucose—2.4 mmol/L (40mg/dl). (If glucose given earlier, 6.0mmol/L [106mg/dl])

Detailed Exam

Head— As before.

Neck—

Trachea— Increased tracheal deviation.

Neck veins— JVD.

Chest

Looking— Contusions on left side of chest.

Feeling— Tender to palpate.

Listening— Absent air entry on left side.

Percussion— Hyper-resonant if percussed.

Abdomen—Increased abdominal distention.

Pelvis— As before.

Extremities

Upper— As before.

Lower— As before.

ITLS Scenario 4 – Pedestrian struck by motor vehicle (Tension Pneumothorax/Femur Injury)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	None.
Number of Patients	One.
Need for more help or equipment	You and your partner have arrived first on scene. Fire department is en route, and there is a first aid responder on scene.
Mechanism of Injury	A young male was struck walking along the side of the road, by a vehicle travelling approximately 50 mph (80 kph).

Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious bleeding?	Patient is found lying semi-prone on his left side. His eyes are closed on approach and obvious respiratory distress is heard. No obvious major bleeding is observed.
LOC (AVPU)	Eyes open to verbal, patient appears confused.
Delegate Spine	Direct team member to apply SMR.
Airway - Snoring? Gurgling? - Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Rapid resps with shallow air movement. Requires ventilations (O2).
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadly bleeding?	Weak, rapid pulses at radial and carotid. Cyanotic, cool, clammy skin. No major bleeding observed.

Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	Matted blood in hair. None observed. None observed. None observed.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	No injuries observed. Possibly tracheal deviation to right side. Distended jugular veins. Direct team member to apply collar.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. Contusions on left side of chest. Crepitus and tenderness felt on palpation. Heart tones normal.
Breath Sounds (2 points)	Decreased air entry on left side. Hyper-resonant if percussed.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. Tender to palpate. Slight distention.
Pelvis (DCAP-BLS-TIC)	Nothing significant found.
Lower Extremities - DCAP-BLS-TIC - Distal PMS	Left femur swelling, tenderness, deformity. Expose. Direct team member to stabilize if resources available.
Upper Extremities - DCAP-BLS-TIC - Distal PMS	No upper extremity injuries noted.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Check posterior during roll onto board.
Notification	Notify hospital immediately. Note that patient is short of breath, with a tension pneumothorax requiring decompression.

Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Eyes open to verbal, patient appears more confused.
Airway - Snoring? Gurgling? - Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Rapid respirations with shallow air movement. Continue ventilations.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Radial pulses now absent. ** Change ** Carotid pulses still rapid and present. Cyanotic, cool, clammy skin.
Reassess Vital Signs	* In repeat ongoing assessments
Reassess Neck	Visible tracheal deviation to right side. Increased jugular vein distention
Reassess Chest	Absent air entry on left side
Reassess Abdomen	No changes
Reassess interventions	Ventilations still effective but decreased compliance.

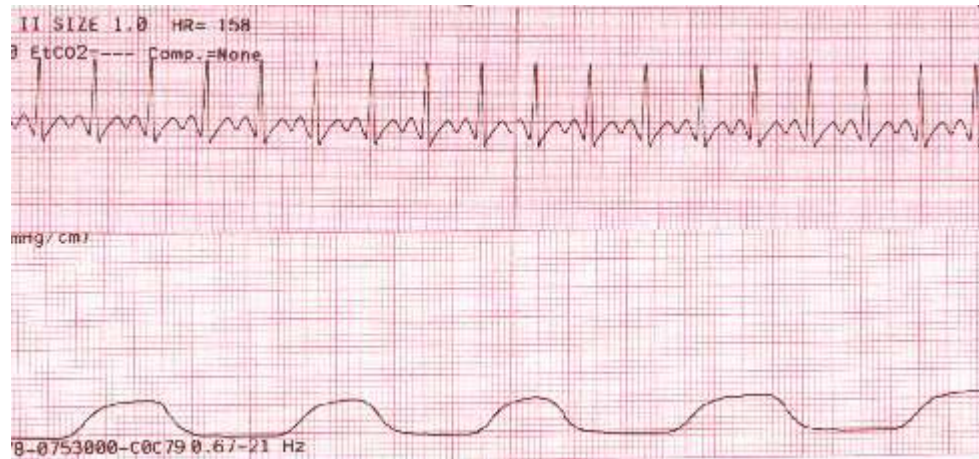
Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	"Can't breathe" Penicillin Insulin Diabetes Unknown "He drove right over me!"
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	90/50 (70/40 if not decompressed) 150 36, shallow unless ventilated 22 Square 91% with assisted ventilations 2.4 mmol/L (40mg/dl). (If given earlier, 6.0 mmol/L [106mg/dl]). 3/4/5 = 12 Cool, pale, clammy Equal and reactive Note: It is acceptable to initiate IV access and treat the hypovolemia (N/S bolus) at
Head to Toe (Detailed Exam) - Head - Neck - Chest - Breath sounds - Heart sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	As before. Increased tracheal deviation and JVD. As before. Absent air entry on left side. As before. Increased abdominal distention. As before. As before. As before.

SCENARIO 4 CAPNOGRAPH & ECG

Initial ETCO₂: 22

Waveform: Square

This is also a perfusion scenario. With proper decompression technique, the ETCO₂ should return to 40 mmHg.



SCENARIO 5

Setting

EMS/Prehospital: A patient was leaning over a third floor balcony when the railing gave way and the patient and railing fell approximately 35 feet (10 m) to the ground.

Occupational Health/Industrial: You respond to a crude oil refining factory for a reported fall. One of the employees was attempting to make a repair at approximately the 35 ft. (10 m) level when a railing gave way and his safety line failed. The patient and railing fell to the ground.

Military: You respond to a reported fall while in port. A crew member was making repairs to the ship navigation radar at the approximate level of 35 feet (10 m) when a railing gave way and his safety line failed. The patient and railing fell to the deck.

History

S—"I hurt all over."

A—Penicillin.

M—Insulin.

P—Diabetes.

L—Last night. Did not eat breakfast today.

E—"The railing gave way!"

Injuries

1. Hypoglycemia.
2. Fractured pelvis.
3. Scalp injury.
4. Abdominal injury.

Patient Instructions

You are confused but able to respond to questions. You feel and express pain when abdomen is palpated in all four quadrants. You cry out in pain when pelvis is examined.

Moulage Instructions

Patient has a laceration on the scalp with slight bleeding. Pelvis is fractured.

Instructor Information

Scene size-up— The fallen railing is on the ground near the patient and loose railing is hanging above. There is 1 patient.

Initial assessment

General impression— Patient is found lying on the left side, holding onto his left upper leg. A small amount of blood is visible on the patient's scalp. The patient is obviously confused and talking.

LOC—Alert but confused.

Delegate spine—Direct team member to apply SMR.

Airway—Clear and open.

Breathing—Normal rate and depth of ventilations.

Ventilation instructions—Direct team member to apply O2.

Circulation

Pulses—Rapid radial pulse present.

Bleeding—Slight bleeding from scalp wound.

Skin color, condition, and temperature—Normal, warm, and dry.

Decision—Rapid trauma survey due to mechanism of injury.

Rapid trauma survey

Head—Slight bleeding from scalp laceration. Direct team member to control bleeding. Otherwise normal.

Neck—No obvious injury. Direct team member to apply collar once checked.

Trachea—Midline.

Neck veins—Flat.

Chest

Looking—No obvious injuries found.

Feeling—No crepitus or tenderness.

Listening—Breath sounds present and equal.

Percussion—Normal.

Abdomen—Diffusely tender to palpation.

Pelvis—Tender and unstable. Direct team member to secure pelvis.

Extremities

Lower—No injuries detected. Good distal PMS.

Upper—No injuries detected. Good distal PMS.

Exam of posterior—Normal.

Decision—Unstable, load and go. Direct team member to strap legs together. Notify hospital immediately that you have a confused patient with scalp, abdominal and pelvic injuries resulting from a significant fall.

Ongoing exam

Subjective changes—Patient states “abdominal pain is worsening.”

Neurological

LOC—Patient increasingly confused.

Pupils—4 mm equal and reactive.

GCS—4/4/6=14.

Airway—Clear and open.

Breathing—Normal rate and quality.

Circulation

Blood pressure—110/70.

Pulses—Radial pulse weak and rapid.

Skin color, condition, and temperature—Pale, cool, and clammy. **Deterioration.

Neck—No change.

Trachea—Midline.

Neck veins—Flat.

Chest—No change.

Abdomen—More tender in lower abdomen.

Focused assessment of injuries

1. **Scalp**—Scalp wound.

2. **Abdomen**—Increasing tenderness.

3. **Hypoglycemia**—2.2 mmol/L (40mg/dl).

Check interventions

Secondary survey

History and vital signs—SAMPLE history from patient if not already done.

Neurological

LOC—Confused.

Pupils—4mm, equal and reactive.

Sensory—Normal.

Motor—Normal.

GCS—4/4/6=14.

Finger-stick glucose—2.2 mmol/L (40 mg/dl). (If glucose given, 6.7 mmol/L [120 mg/dl]).

ETCO₂: 40, waveform square

Head—Scalp wound.

Airway—Clear and open.

Breathing—24, normal rate and depth.

Neck—No injuries.

Trachea—Midline.

Neck veins—Flat.

Circulation—BP 110/70, pulse 100 and weak at radial. Skin pale, cool, clammy.

Chest

Looking—No injuries detected.

Feeling—No crepitus or tenderness.

Listening—Breath sounds present and equal.

Percussion—Normal

Abdomen—Increasing abdominal tenderness.

Pelvis—No changes.

Extremities

Lower—Unchanged from above. Good distal PMS.

Upper—No injuries noted. Good distal PMS.

ITLS Scenario 5 - Fall from Balcony on 3rd Floor (Hypoglycemic Pt with Fractured Pelvis, Scalp Injury, Abdominal Injury)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	Railing near patient and loose railing hanging above.
Number of Patients	One.
Need for more help or equipment	None.
Mechanism of Injury	You respond to a reported fall in which a railing gave way and the patient and railing fell approximately 35 feet (10 m) to the ground.

Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious bleeding?	Pt. is found lying on left side holding onto his left upper leg. A small amount of blood is visible on the patient's scalp. The patient is obviously conscious and talking.
LOC (AVPU)	Alert but CONFUSED.
Delegate Spine	Direct team member to apply SMR.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Normal rate and depth of ventilations. Direct team member to apply O2.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadly bleeding?	Rapid radial pulse present. Normal, warm, and dry. Slight bleeding from scalp wound.

Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	Slight bleeding from scalp lac. Control. Otherwise normal. No. No. No.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	No obvious injury. Midline. Flat neck veins. Direct team member to apply.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. No obvious injuries found.
Breath Sounds (2 points)	Present and equal.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. Diffusely tender to palpation. None.
Pelvis (DCAP-BLS-TIC)	Tender, and unstable, direct team member to secure pelvis
Lower Extremities - DCAP-BLS-TIC - Distal PMS	No injuries detected. Good distal PMS.
Upper Extremities - DCAP-BLS-TIC - Distal PMS	No injuries detected. Good distal PMS.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Direct member to strap legs together. Ensure posterior is checked during move.
Notification	Notify hospital immediately. Note that you have a confused patient with scalp, abdominal and pelvic injuries resulting from a significant fall.

Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Patient INCREASINGLY confused. Pt. states "abdominal pain is worsening".
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Normal rate and quality.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Radial pulse weak and rapid. Pale, cool, clammy. ** Deterioration
Reassess Vital Signs	* In repeat ongoing assessments
Reassess Neck	No change.
Reassess Chest	No change.
Reassess Abdomen	More tender in lower abdomen.
Reassess interventions	N / A

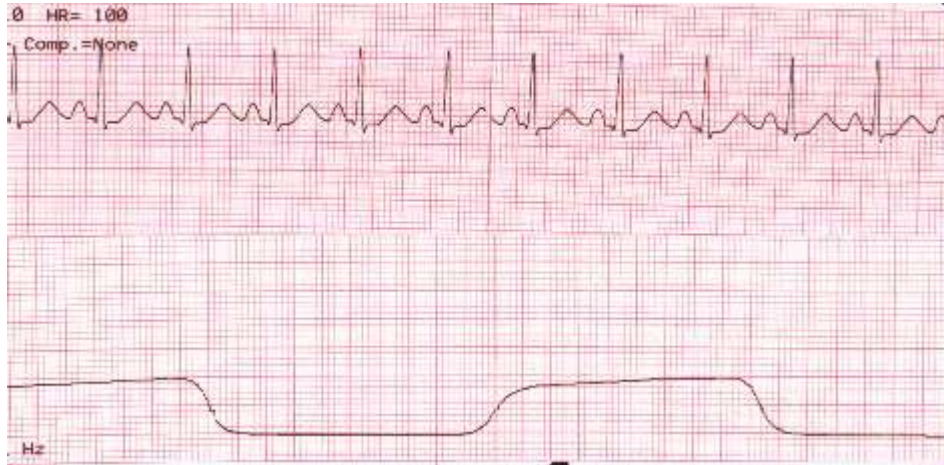
Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	"I hurt all over". Penicillin. Insulin. Diabetes. Last night. Did not eat breakfast today. "The railing gave way!"
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	110/70. 100, weak at radial. 24, normal rate and depth. 40 mmHg Square 99% with O2. 2.2 mmol/L (40mg/dl) 4/4/6 = 14. Pale, cool, clammy. 4mm, equal and reactive. Note: It is acceptable to initiate IV access at this time, and bolus if needed. Glucose should be administered.
Head to Toe - Head - Neck - Chest - Breath sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	Scalp wound. No injuries. No tracheal shift or JVD. No injuries detected. Breath sounds present and equal. Increasing abdominal tenderness. No changes. Unchanged from above. Good distal PMS. No injuries note. Good distal PMS.

SCENARIO 5 CAPNOGRAPH & ECG

Initial ETCO_2 : 40

Waveform: Square

In this case, the ETCO_2 is initially normal with the normal MAP. However, if this person deteriorates, the ETCO_2 should reflect it by lowering.



SCENARIO 6

Setting

EMS/Prehospital: A young male was found in an alley. The police state that the patient was involved in a gang-style attack.

Occupational Health/Industrial: A factory supervisor is found in an alley at the back of the factory. The police state that the patient was involved in an attack by a former employee whose job was terminated earlier in the week.

Military: A Sergeant-Major was found in an alley at the back the barracks. The MPs (militray police) state the casualty was involved in an attack by a soldier who was disciplined earlier in the week.

History

S— Head and extremity trauma.

A— Unknown.

M— Unknown.

P— Unknown.

L— Unknown.

E— Found post assault in an alley.

Injuries

1. Contusion to the face, bleeding from right ear. Battles sign right ear.
2. Severe bleeding from left forearm.
3. Deformed closed left femur fracture. Moderately bleeding gunshot wound right lower leg.
4. Deformity to left femur.
5. Gunshot wound to right flank area.

Patient Instructions

You are lying on the ground with your eyes closed and moaning. You moan whenever your left forearm, left femur or right lower leg is touched.

Moulage Instructions

Patient has contusion to his face, severe bleeding from a wound on his left forearm and right lower leg. He has a deformity to his left upper thigh and a gunshot wound to his right flank area.

Instructor Information

Scene size-up— You are called to a scene where a young man was found in an alley following a gang style assault. Police are in attendance. Scene is safe. You have 1 patient.

Initial assessment

General impression— Patient is lying prone in the alley.

LOC— Moans to pain.

Delegate spine—Direct team member to apply SMR.

Airway— Clear and open.

Breathing— Slow and shallow respirations.

Ventilation instructions— Direct team member to assist ventilations at 10- 12/minute.

Circulation

Pulses— Radial pulse absent. Rapid carotid pulse.

Bleeding— Severe bleeding from left forearm and moderate bleeding from right lower leg.

Skin color, condition, and temperature— Pale, cool and clammy.

Decision— Direct member to control bleeding.

Perform a rapid trauma survey due to mechanism and assessment.

Rapid trauma survey

Head— Contusion to face. Bleeding from right ear. Battle's sign present on right side.

Neck— No obvious injury.

Trachea— Midline.

Neck veins— Flat.

Chest

Looking— No injuries noted.

Feeling— No injuries noted.

Listening— Lung sounds equal and clear bilaterally.

Percussion—Normal.

Abdomen— No injuries noted. Soft, no tenderness.

Pelvis— Stable.

Extremities

Lower— Deformed closed left femur fracture. Moderate bleeding from gunshot wound to right lower leg. Direct team member to control and stabilize. No distal pulse.

Upper— Bleeding gunshot wound on left forearm now easing. Direct member to control and stabilize. No movement, sensation. Good distal pulse.

Exam of posterior— Gunshot wound over the right flank area with moderate bleeding.

Direct team member to control the bleeding

Decision: This is a load and go. Notify the hospital that you have a young male who has been assaulted. He has a GCS of 7 with assisted ventilations. He has a gunshot wound to his right lower leg and right posterior flank. He has a deformity and wound to his left forearm and left femur.

Ongoing exam

History (not able to be obtained from the patient).

Vital signs—BP 70/40. P 140, R 8 if unassisted, SPO₂ no capture.

Neurological

LOC— Moans to pain.

Pupils— Left 5 mm and normal, right 8 mm and sluggish.

Sensory— Moans to pain.

Motor— Moans to pain.

GCS— 7 (1/1/5).

Airway— Intubated.

Breathing— Assisted ventilations at 10-12/minute.

Circulation

Blood pressure— 70/40 if no fluids; 80/50 with fluids.

Pulses— 140 if no fluids; 130 with fluids.

Skin color, condition, and temperature— Pale, cold and clammy.

Neck

Trachea— Midline.

Neck veins— Flat.

Chest— No obvious injuries.

Abdomen— No injuries noted.

Focused assessment of injuries

1. Contusion to the face.
2. Severe bleeding from left forearm.
3. Severe bleeding from right lower leg.
4. Deformity to left femur.
5. Gunshot wound to right flank area.

Secondary survey

History and vital signs— BP 90/60, pulse 120, RR 8 if unassisted.

Neurological

LOC— Intubated.

Pupils— Left 5mm and normal, right 8 mm and sluggish.

Sensory— None.

Motor— None.

GCS— 3.

Finger-stick glucose— 6.0mmol/L (106 mg/dl).

ETCO₂: 18, waveform square

Head— Unchanged.

Airway— Intubated.

Breathing— Assisted at 10-12/minute.

Neck

Trachea— Midline.

Neck veins— Flat.

Circulation—Pulse 120. Skin pale, cold, clammy,
Chest

Looking— Unchanged.

Feeling— Unchanged.

Listening— Breath sounds equal and clear bilaterally with assistance.

Percussion—Normal

Abdomen— Unchanged.

Pelvis— Unchanged.

Extremities

Upper— Dressing and splints applied.

Lower— Dressing and splints applied.

ITLS Scenario 6 – Assault (Multi-system Trauma)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	None.
Number of Patients	One.
Need for more help or equipment	Police are on scene and can assist.
Mechanism of Injury	A young male is found in an alley. The police state that the patient was involved in an attack.



Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious bleeding?	Patient is lying prone on the ground in the alley. His eyes are closed, contusions are noted on the face, and severe bleeding is observed on the left forearm.
LOC (AVPU)	Moans to pain.
Delegate Spine	Direct team member to apply c-spine.
Airway - Snoring? Gurgling? - Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Slow, shallow respirations. Direct team member to assist ventilations at 10-12 breaths a minute.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadly bleeding?	Radials absent, rapid at carotid. Pale, cool, clammy Severe bleeding at left forearm and moderate bleeding from right lower leg. Direct member to control.



Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	Facial contusions noted. Bleeding from right ear. No. Present on right side.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	No obvious injury. Midline. Flat neck veins. Direct team member to apply SMR.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. No injuries noted.
Breath Sounds (2 points)	Clear air entry bilaterally.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. No injuries noted. Soft, no tenderness.
Pelvis (DCAP-BLS-TIC)	Stable.
Lower Extremities - DCAP-BLS-TIC - Distal PMS	Deformed closed left femur fracture. Moderately bleeding gunshot wound right lower leg. Direct member to control and stabilize. No distal pulse.
Upper Extremities - DCAP-BLS-TIC - Distal PMS	Bleeding gunshot wound on left forearm now easing. Direct member to control and stabilize. No movement/sensation, good distal pulse.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Strap legs together to stabilize injuries. Check posterior during roll onto board. Pt has a gunshot wound with moderate bleeding over right flank. Control.
Notification	Notify hospital immediately.



Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Moans to pain.
Airway - Snoring? Gurgling? - Stridor? Silence?	Intubated.
Breathing - Rate, Depth, Effort	Slow, shallow respirations (rate of 8/min if not ventilated). Continue ventilations at 10-12/minute.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Radials absent, rapid at carotid. Pale, cool, clammy.
Reassess Vital Signs	BP 70/40, P 140 (if no fluids). BP 80/50, P 130 (with fluids).
Reassess Neck	No change.
Reassess Chest	No change.
Reassess Abdomen	No change.
Reassess interventions	Ensure ventilations still effective.



Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	Head and extremity trauma. Unknown. Unknown. Unknown. Unknown. Found post assault in alley.
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	90/60 after second fluid bolus. 120. 8 if unassisted. 18 Square No capture. 6.0 mmol/L (106 mg/dl) 3 Pale, cool, clammy. Left: 5mm and normal. Right: 8mm and sluggish. Note: It is acceptable to initiate IV access and treat the hypovolemia (N/S bolus) at this time. Target BP is 90 systolic.
Head to Toe - Head - Neck - Chest - Breath sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	Multiple contusions, blood from right ear, Battle's signs on right side. Unchanged. No injuries noted. Equal air entry to bases with ventilation. Unchanged. As before. Deformed left femur. Dressed gunshot wound on right leg. Good distal PMS. Dressed gunshot wound on left forearm.

SCENARIO 6 CAPNOGRAPH & ECG

Initial ETCO_2 : 18

Waveform: Square

This is also a perfusion issue with the closed head injury symptoms. As perfusion increases, ETCO_2 should also increase, no more than normal.



SCENARIO 7

Setting

EMS/Prehospital: The patient was performing stunts on his motorcycle when he lost control and collided with a sign post. The police called for EMS.

Occupational Health/Industrial: The worker was performing stunts on his motorcycle in the garage of the factory and lost control and collided with a sign post. Workers have called you as the medical response for the factory.

Military: A soldier who just returned from overseas duty was performing stunts on his motorcycle in the garage of the barracks and lost control and collided with a sign post. His comrades have called you as the medical response.

History

S— “I can’t feel anything. I can’t move.”

A— None.

M— None.

P— None.

L— 4 hours ago.

E— “I was showing my friends my stunts and lost control.”

Injuries

1. Spinal cord injury.
2. Compound fracture of right tibia.
3. Closed deformity of left tibia.
4. Swelling and tenderness at base of neck.

Patient Instructions

You should complain of pain when your neck is examined. You can flex your arms at the elbows but have a weak grip with your hands. Otherwise you are unable to move.

Moulage Instructions

The patient should wear a full face motorcycle helmet.

Instructor Information

Scene size-up— The police are on scene and the scene is safe. There is 1 patient.

Initial assessment

General impression— The patient is found supine lying on the grass next to the road. The patient is wearing a motorcycle helmet. You note the patient has a deformity on both lower legs. The patient states, “I can’t feel anything.”

LOC— Alert.

Delegate Spine - Direct team member to apply SMR and remove helmet.

Airway— Clear and open.

Breathing— Normal rate, VERY shallow, diaphragmatic breathing only.

Ventilation instructions— Direct team member to assist ventilations.

Circulation

Pulses— Normal radial pulse.

Bleeding— None.

Skin color, condition, and temperature— Normal color, warm and dry.

Decision— Rapid trauma survey due to mechanism and initial assessment.

Rapid trauma survey

Head— No sign of trauma – the patient was wearing a helmet.

Neck— Swelling and tenderness at the base of the neck.

Trachea— Midline.

Neck veins— Flat.

Chest — Expose.

Looking— No injuries noted. Patient is using the diaphragm to breathe.

Feeling— No injuries noted. No sensation.

Listening— Breath sounds present and equal.

Percussion— Normal.

Abdomen— Expose. No obvious injury. Soft.

Pelvis— Stable to palpation. No sensation.

Extremities

Upper— No injuries noted on arms. Weak grip bilaterally. Good distal pulses.

Lower— Compound fracture to the right tibia, closed fracture to left tibia. No movement or sensation to lower legs. Good distal pulses. Direct member to cover and stabilize right tibia and stabilize left tibia.

Exam of posterior— No injuries noted. No movement or sensation.

History (obtain from the patient)

Decision— Unstable patient, load and go. Direct member to strap legs together. Ensure that the posterior is checked during the move. Oxygen with assisted ventilations, start 2 large bore IVs but run fluid at a rate to maintain a radial pulse. Notify the hospital immediately that you have a conscious patient with spinal deficits, a compound tibia fracture which is covered and stabilized and a left tibia deformity which is stabilized.

Ongoing exam

Vital signs— BP 70/50, pulse 72, respiratory rate 12 and very shallow if not assisted.

Neurological

LOC— Alert.

Pupils— 4 mm, equal, and reactive.

Sensory— No sensation.

Motor—No motor.

GCS— 15.

Airway— Clear and open.

Breathing—Unchanged. Continue ventilations.

Circulation

Blood pressure— 80/60 if fluids given.

Pulses— 80.

Skin color, condition, and temperature— Normal color, warm and dry.

Neck— No injuries noted.

Trachea— Midline.

Neck veins— Flat.

Chest— No injuries noted.

Abdomen— No injuries noted.

Focused assessment of injuries

1. Spinal cord injury.
2. Compound fracture of right tibia.
3. Closed deformity of left tibia.
4. Swelling and tenderness at base of neck.

Check interventions

Secondary survey

History— SAMPLE history from patient if not already done.

Vital signs BP 80/60, pulse 70, respirations 12 with assisted ventilations.

Neurological

LOC— Alert.

Pupils— 4 mm, equal and reactive.

Sensory— None.

Motor— None.

GCS— 15.

Finger-stick glucose— NA.

ETCO₂: 20 mmHg, waveform square

Head— No injuries noted.

Airway— Clear.

Breathing— No injuries noted. Assisted ventilations.

Neck— Still tenderness and swelling to the base of the neck.

Trachea— Midline.

Neck veins—Flat.

Circulation— Radial pulse present; skin normal color, warm and dry.

Chest

Looking— No injuries noted, still only diaphragmatic breathing.

Feeling— No injuries noted, no sensation.

Listening— Breath sounds equal and clear bilaterally, normal heart sounds.

Percussion— NA.

Abdomen— No injuries noted.

Pelvis— No injuries noted.

Extremities

Upper— No injuries noted on arms. Weak grip bilaterally. Good distal pulses.

Lower— Open fracture to the right tibia, closed deformity to left tibia. No movement or sensation to lower legs. Good distal pulses. Dressings and stabilize right tibia and stabilize left tibia.

ITLS Scenario 7 - Motorcycle Collision (Conscious Pt with Spinal & Tibia Injuries)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	None.
Number of Patients	One.
Need for more help or equipment	The police are on scene and can assist.
Mechanism of Injury	The patient was performing stunts on his motorcycle, lost control and collided with a sign post. Police called for EMS.



Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious bleeding?	Pt. is found supine lying on the grass next to the road. The patient is wearing a motorcycle helmet. You note the patient has deformity on both lower legs. The pt states, "I can't feel anything."
LOC (AVPU)	Alert.
Delegate Spine	Direct team member to apply SMR. Remove helmet.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Normal rate, VERY shallow, diaphragmatic breathing only. Direct member to assist ventilations.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadly bleeding?	Normal radial pulse. Normal, warm and dry. None.



Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	No sign of trauma (was wearing helmet). No. No. No.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	Swelling and tenderness at base of neck. Midline. Flat neck veins. Direct team member to apply.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. No injuries noted. Patient is using diaphragm to breath.
Breath Sounds (2 points)	Present and equal.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. No injuries. No sensation. Soft.
Pelvis (DCAP-BLS-TIC)	Stable to palpation. No sensation.
Lower Extremities - DCAP-BLS-TIC - Distal PMS	Compound fracture to right tibia, closed fracture to left tibia. Good distal pulse. Direct member to cover wound on right tibia and stabilize both tibias. No sensation or movement.
Upper Extremities - DCAP-BLS-TIC - Distal PMS	No injuries detected. Weak grips bilaterally. Good distal circulation.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Direct member to strap legs together. Ensure posterior is checked during move. No injuries noted. No movement or sensation.
Notification	Notify hospital immediately. Note that you have a conscious patient with spinal deficits and a compound tibia fracture.



Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Alert. Still no feeling from neck down.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Unchanged. Continue ventilations.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Radial pulse present. Normal, warm, dry. * Change
Reassess Vital Signs	BP 80/60 if fluids given. Pulse 80.
Reassess Neck	No change.
Reassess Chest	No change.
Reassess Abdomen	No change.
Reassess interventions	Ensure ventilations remain effective.



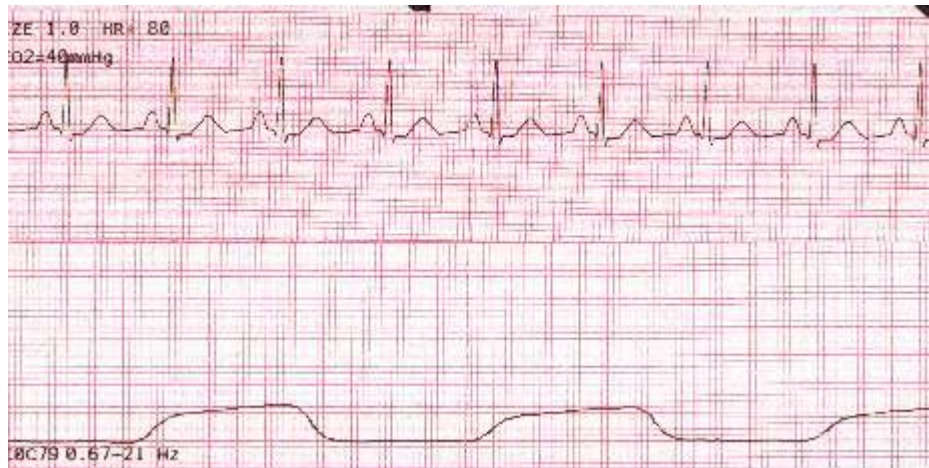
Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	"I can't feel anything. I can't move". None. None. None. 4 hours ago. "I was showing my friends my stunts and lost control."
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	80/60. 70. 12, very shallow if not assisted. 20 Square No capture. N / A. 4/5/6 = 15. Normal, warm, dry skin. 4mm, equal and reactive. Note: It is acceptable to initiate IV access at this time, and bolus if needed.
Head to Toe - Head - Neck - Chest - Breath sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	No injuries noted. Tender at base of neck. No injuries detected. Still only diaphragmatic breathing. No injuries noted. No injuries noted. Unchanged from above. Good distal circ. No injuries note. Good distal circ.

SCENARIO 7 CAPNOGRAPH & ECG

Initial ETCO₂: 20

Waveform: Square

This spinal shock scenario is also a perfusion issue.



SCENARIO 8

Setting

EMS/Prehospital: You have been called to a house fire caused by a gas explosion. The patient is lying on the ground, just outside the front doorway

Occupational Health/Industrial: You have been called to a factory fire caused by a gas explosion in one of the process plants. The patient is lying on the ground just outside the front doorway of the process plant room.

Military: You have been called to a fire aboard a ship caused by an explosion in the engine room. The patient is lying on the deck just outside the forward hatch to the engine room.

History

S— “I have burned my face. It hurts. I can’t feel anything from the neck down.”

A— None known.

M— None.

P— Patient states he is healthy.

L— 6 hours ago.

E— “I opened the door, and the flames burned me and threw me backward onto the ground.”

Injuries

1. Facial burns, singed nasal hairs. Red burns at nose and mouth. Burns inside mouth.
2. Blistering burns of anterior neck, chest, abdomen and upper arms.
3. Cervical spine injury.

Patient Instructions

You have a hoarse voice and state “Get me out of here, my face is burning.” Also state that you cannot move.

Moulage Instructions

Apply burn moulage to face, neck, chest, abdomen, and upper arms.

Instructor Information

Scene size-up— Scene safe. One patient. You and your partner arrive on scene shortly after the fire department.

Initial assessment

General impression— A man is lying on the ground yelling “Get me out of here, my face is burning”. The patient’s clothes are burned and smoldering. Emergency rescue is required.

LOC— Alert.

Delegate spine— Direct team member to apply SMR.

Airway— Open. Burns visible in the mouth. Patient has a hoarse voice and is complaining that his face is burning. Red burns are noted at the nose and mouth, as well as singed nasal hairs.

Breathing— Shallow respirations at a normal rate

Ventilation instructions— Direct team member to apply high flow oxygen via non rebreather mask.

Circulation

Pulses— Present, normal rate.

Bleeding— None noted.

Skin color, condition, and temperature— Normal color, warm and dry where not burned.

Decision— Rapid Trauma Survey due to mechanism and facial burns.

Rapid trauma survey

Head— Facial burns, singed nasal hairs, burns inside the mouth.

Neck— Blistering burns of anterior neck. Tenderness to cervical spine with step off deformity.

Trachea— Midline.

Neck veins— Flat.

Chest

Looking— Burns on anterior chest.

Feeling— Diaphragmatic breathing.

Listening— Breath sounds clear bilaterally. Normal heart sounds.

Percussion— Stable.

Abdomen— Burns on anterior surface. Soft, no tenderness.

Pelvis— Stable.

Extremities

Upper — Burns on anterior surface of arms. No movement or sensation. Good distal pulses.

Lower— No sign of trauma. No movement or sensation. Good distal pulses.

Exam of posterior— No findings.

Decision— Load and go, watch for airway compromise, consider the need for intubation. Cool burns for 1-2 minutes and cover with a clean sheet. Insert two IV lines with fluid at a controlled rate. Notify hospital that the patient has facial and airway burns and a cervical spine injury.

Ongoing exam

History— (obtain from the patient).

Vital signs— BP 70/40, pulse 65, RR 12.

Neurological

LOC— Alert.

Pupils— Equal and reactive.

Sensory— None below neck.

Motor— None below neck, diaphragmatic breathing.

GCS— 15 (4/5/6).

Subjective changes— Ask the patient how he is feeling.

Neurological

LOC— Alert.

Pupils— Equal and reactive

GCS— Unchanged 15 (4/5/6).

Airway— In addition to the hoarse voice noted previously, the patient now has stridor with respirations.

Breathing— Normal rate. Diaphragmatic breathing.

Circulation

Blood pressure— 80/60 after fluids.

Pulses— 65 after fluids.

Skin color, condition, and temperature— Normal color, warm and dry where not burned.

Neck

Trachea— No change.

Neck veins— No change.

Chest— No change.

Abdomen— No change.

Focused assessment of injuries

1. Facial burns, singed nasal hairs. Red burns at nose and mouth. Burns inside mouth.
2. Blistering burns of anterior neck, chest, abdomen and upper arms.
3. Cervical spine injury.

Secondary survey

History and vital signs— As above.

Neurological

LOC— Unresponsive due to intubation.

Pupils— Equal and reactive.

Sensory— None below the neck.

Motor— None below the neck.

GCS— 3 due to intubation.

Finger-stick glucose— 6.7 mmol/l (120 mg/dl).

ETCO₂: 20, waveform sloped inspiratory downstroke.

Head— Unchanged.

Airway— Intubated.

Breathing— Assisted at 10 -12/ minute.

Neck—Unchanged.

Trachea— Midline.

Neck veins— Flat.

Circulation— Skin warm and dry.

Chest

Looking— No change.

Feeling— No change.

Listening— No change.

Percussion—Normal

Abdomen— No change.

Pelvis— No change.

Extremities

Upper— No change.

Lower— No change.

ITLS Scenario 8 – Explosion at Fire (Burns with Airway Compromise)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	None.
Number of Patients	One.
Need for more help or equipment	You and your partner arrive on scene shortly after the fire department.
Mechanism of Injury	You have been called to a fire caused by an explosion. The patient is lying on the ground just outside the front doorway.



Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious Bleeding?	A male patient is lying on the ground, yelling "Get me out of here, my face is burning!" The patient's clothes are burned and smoldering. Emergency Rescue is required.
LOC (AVPU)	Alert
Delegate Spine	Direct team member to apply SMR once safe.
Airway - Snoring? Gurgling? Stridor? Silence?	Open. Pt. has a hoarse voice, and is complaining that his face is burning. Red burns are noted at nose and mouth. Singed nasal hairs.
Breathing - Rate, Depth, Effort	Shallow but normal rate. Direct team member to apply high flow O2 via NRB.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadly bleeding?	Present, rate seems normal. Normal, warm, dry (in unburned areas). No major bleeding observed.



Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	Facial burns, singed nasal hairs, burns inside mouth. No fluid leaks, raccoon eyes, or battle's signs noted.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	Tenderness to cervical spine with step-off deformity. Blistering burns of the anterior neck. Midline. Flat neck veins. Direct team member to apply.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. Diaphragmatic breathing. Burns on anterior chest.
Breath Sounds (2 points)	Clear air entry bilaterally.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. Burns on anterior surface. Soft, no tenderness.
Pelvis (DCAP-BLS-TIC)	Stable.
Lower Extremities - DCAP-BLS-TIC - Distal PMS	No sign of trauma. No movement / sensation, good distal circ.
Upper Extremities - DCAP-BLS-TIC - Distal PMS	Obvious burns on anterior surface. No movement / sensation, good distal circ.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Cool burns for 1-2 minutes. Cover with clean sheet. Check posterior during roll onto board. No obvious injury.
Notification	Notify hospital immediately. Note that patient has facial and airway burns.



Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Alert
Airway - Snoring? Gurgling? Stridor? Silence?	Stridor is noted with respirations. Hoarse when speaking.
Breathing - Rate, Depth, Effort	Diaphragmatic. Shallow, normal rate.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Present, rate seems normal. Normal, warm, dry (in unburned areas).
Reassess Vital Signs	* In repeat ongoing assessments: BP 80/60, pulse 65 (after fluids).
Reassess Neck	No change.
Reassess Chest	No change.
Reassess Abdomen	No change.
Reassess interventions	No ongoing interventions. Patient requires intubation secondary to stridor.



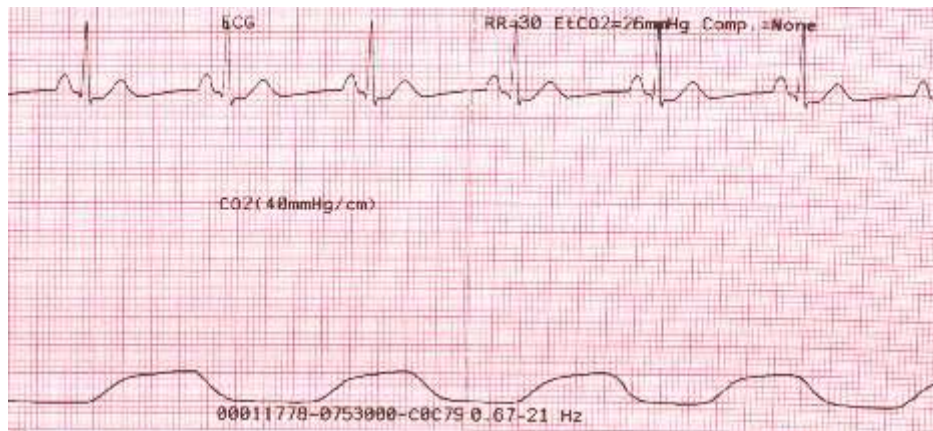
Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	"I have burned my face. It hurts. I cannot feel anything from the neck down. NKA None Patient states healthy 6 hours ago "I opened the door and the flames burned me and threw me backward onto the ground."
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	80/65 65 12, with assisted ventilations 20 Sloped inspiratory downstroke No capture 6.7 mmol/L (120 mg/dl) Unresponsive, GCS 3 due to DAI Normal, warm, dry (in unburned areas) Equal and reactive Note: It is acceptable to initiate IV access and treat the hypovolemia (N/S bolus) at this time.
Head to Toe - Head - Neck - Chest - Breath sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	Unchanged. Unchanged. Anterior chest burns. Intubated. No sign of trauma. As before. As before. Left forearm fracture.

SCENARIO 8 CAPNOGRAPH & ECG

Initial ETCO₂: 20

Waveform: Sloped inspiratory downstroke

This is a case of shock so the ETCO₂ would be low; however, the waveform, due to severe upper airway swelling, will have a pronounced slur in the respiratory downstroke. If the patient is intubated, the ETCO₂ remains the same as long as they are hypotensive, but the waveform will be square on successful intubation or cricothyrotomy.



SCENARIO 9

Setting

EMS/Prehospital: A cyclist was hit by a support vehicle after he lost control of his bicycle in a cycle race. The support vehicle ran over the cyclist. The cyclist is lying on the road.

Occupational Health/Industrial: You have been covering a charity cycle race by workers from your factory. A cyclist was hit by a support vehicle after he lost control of his bicycle. The support vehicle ran over the cyclist. The cyclist is lying on the road.

Military: You have been called to the airfield ramp. A ground crew was hit by a pallet loader after the driver control was lost. The pallet loader ran over the crew member. The crew member is lying on the tarmac.

History

S— Patient moans in pain and has mid-shaft femur swelling to both legs.

A— Unknown.

M— Unknown.

P— Unknown.

L— Unknown.

E— Patient run over by a large vehicle. He may have hit his head.

Injuries

1. Bilateral fractured femurs.
2. Closed head injury.
3. Shock.

Patient Instructions

You should moan when both femurs are palpated. Otherwise do not respond.

Moulage Instructions

Put large bruises/hematoma to both upper thighs. Make patient appear very pale and shocked.

Instructor Information

Scene size-up— There is 1 patient and he is lying on the road. Police are on the scene. An electrical cable on the vehicle roof required emergency services to move it.

Initial assessment

General impression— Patient is lying still on the ground.

LOC— Localizes to pain.

Delegate spine—Direct team member to apply SMR.

Airway— Clear and open. Patient has a gag reflex present.

Breathing— Rapid breathing. Normal depth.

Ventilation instructions— High flow oxygen via non rebreather mask.

Circulation

Pulses— Rapid carotid pulse, no radial pulse present.

Bleeding— No external bleeding.

Skin color, condition, and temperature— Pale, cold and clammy.

Decision— Rapid trauma survey due to the mechanism and injuries.

Rapid trauma survey

Head— Lacerations to forehead.

Neck— No obvious injury.

Trachea— Midline.

Neck veins— Flat.

Chest

Looking— No obvious injury.

Feeling— No obvious injury.

Listening— Breath sounds and heart tones normal.

Percussion—Normal.

Abdomen— No obvious injury.

Pelvis— Stable.

Extremities

Lower— Swollen and deformity in both femurs. Painful to palpation. Good distal pulses.

Upper— No obvious injuries. Good distal pulses.

Exam of posterior— No obvious injury.

Decision — Patient is unstable and load and go. Notify the hospital that you have a patient in shock with a closed head injury and bilateral closed fracture femurs

Ongoing exam

History (obtain from the bystanders).

Neurological

LOC— Localizes to pain.

Pupils— Equal and sluggishly reactive.

Sensory— Localizes to pain.

Motor— Localizes to pain.

GCS— 8 (2/1/5).

Airway— Clear and open with oral airway.

Breathing— Increased rate. Normal depth.

Circulation

Blood pressure— BP 90/65, pulse 130 if fluids given. BP 80/50, pulse 150 if no fluids given.

Pulses— No radial pulse.

Skin color, condition, and temperature— Pale, cold, clammy.

Neck—

Trachea— No change.

Neck veins— No change.

Chest— No change.

Abdomen— No change.

Focused assessment of injuries

1. Bilateral fractured femurs.
2. Closed head injury.
3. Shock.

Check interventions

Secondary survey

History and vital signs— As above.

Neurological

LOC— Localizes to pain.

Pupils— 4 mm bilaterally and sluggish.

Sensory— No change.

Motor— No change.

GCS— 8 (2/1/5).

Finger-stick glucose— 6.7mmol/L (120 mg/dl).

ETCO₂: 22, waveform square.

Head— Laceration to forehead.

Airway— Unchanged.

Breathing— Unchanged.

Neck—

Trachea— Unchanged.

Neck veins— Unchanged.

Circulation— Unchanged.

Chest

Looking— Unchanged.

Feeling— Unchanged.

Listening— Unchanged.

Percussion— Normal

Abdomen— Unchanged.

Pelvis— Unchanged.

Extremities

Upper— Unchanged.

Lower— Unchanged.

ITLS Scenario 9 – Cyclist hit by vehicle (Closed Bilateral Fractured Femurs)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	At the scene of a cycle race, a cyclist has been hit by a vehicle and is lying on the road. Police are on the scene. An electrical cable on the vehicle roof requires emergency move.
Number of Patients	One.
Need for more help or equipment	Police and fire are on scene and can assist.
Mechanism of Injury	The patient was hit by a support vehicle after he lost control of his bicycle during a cycle race. The support vehicle ran over the patient. The patient is lying on the road.



Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious bleeding?	Patient found lying still on the ground.
LOC (AVPU)	Localizes to pain.
Delegate Spine	Direct team member to apply SMR.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open. ** Gag reflex present if OPA attempted.
Breathing - Rate, Depth, Effort	Rapid breathing, normal depth. Direct team member to apply O2 via nonrebreather mask.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadly bleeding?	Rapid carotid pulse, no radial. Cold and clammy skin. No external bleeding noted.



Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	Lacerations on forehead. No. No. No.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	No obvious injury. Midline. Flat neck veins. Direct team member to apply.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. No obvious injury. Breath sounds normal, heart tone normal.
Breath Sounds (2 points)	Clear air entry bilaterally.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. No obvious injury.
Pelvis (DCAP-BLS-TIC)	Stable.
Lower Extremities - DCAP-BLS-TIC - Distal PMS	Swelling and deformity in both femurs. Good distal PMS. Patient moans when palpated
Upper Extremities - DCAP-BLS-TIC / PMS	No injuries noted. Good distal PMS.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Check posterior during roll onto board. No injuries noted.
Notification	Notify hospital immediately. Notification should include that you are en route with a patient run over by a vehicle with two closed femurs.



Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Localizes to pain.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open with oral airway.
Breathing - Rate, Depth, Effort	Fast rate and normal depth.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Rapid, weak no radial pulses. Pale, cool, clammy. BP 80/50, pulse 150. No radial pulse. Direct team member to start IVs and fluids.
Reassess Vital Signs	BP 90/65, pulse 130 if fluids given.
Reassess Neck	No change.
Reassess Chest	No change.
Reassess Abdomen	No change.
Reassess Lower Extremities	More swelling.



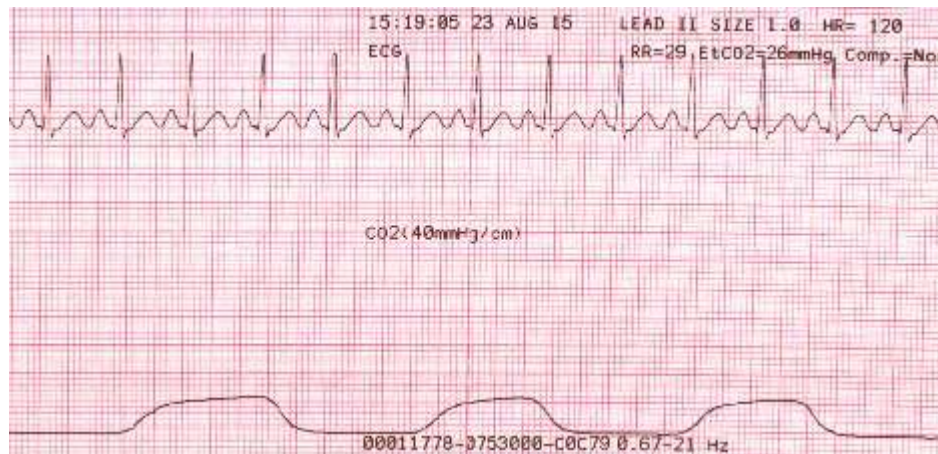
Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	(from bystanders) Severe pain and mid-shaft femur swelling on both legs. Patient moans Unknown. Unknown. Unknown. Unknown. Patient was run over by large vehicle. He may have hit his head.
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	80/60 130, weak at radial. 20, regular 22 Square 8% with O2 assisted. 6.7 mmol/L (120 mg/dl) 2/1/5 = 8. Pale, cool, clammy. Both 4mm, equal and sluggish. Note: It is acceptable to initiate second IV access and treat the hypovolemia (N/S bolus) at this time. Target BP should be 90 systolic.
Head to Toe - Head - Neck - Chest - Breath sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	Laceration to forehead. No fluid leaks, no raccoon eyes or battle's signs. Unchanged. Normal. Equal air entry to bases. Unchanged. No injuries noted Stable. Bilateral femurs. No injuries noted. Good distal PMS.

SCENARIO 9 CAPNOGRAPH & ECG

Initial ETCO_2 : 22

Waveform: Square

This is another shock scenario. As BP increases, so should the ETCO_2 .



SCENARIO 10

Setting

EMS/Prehospital: A patient was guiding a car that was reversing into a parking spot. The patient was crushed by the car when driver hit the accelerator accidentally and pinned the patient against a wall.

Occupational Health/Industrial: A worker was guiding a delivery vehicle while reversing onto the unloading dock of your factory. The worker was crushed by the truck when the driver hit the accelerator accidentally and the truck pinned the worker against the wall.

Military: An airman is guiding a delivery vehicle into the hangar when the driver hits the accelerator by accident. The airman is pinned between the truck and the wall.

History

S— Responds to pain.

A— None.

M— None.

P— Diabetic – medical alert bracelet.

L—4 hours ago.

E— “The patient was helping to guide the driver reversing. The driver’s foot slipped off the brake, crushing the patient against the wall.”

Injuries

1. Basilar skull fracture.
2. Both legs crushed and mangled.
3. Fractured pelvis.
4. Abdominal injuries.

Patient Instructions

You should moan when your abdomen, pelvis, legs, and back of head are palpated.

Moulage Instructions

Patient has crushed, mangled lower legs. Both are bleeding. Battles sign behind the right ear. Cerebrospinal fluid from right ear.

Instructor Information

Scene size-up— Scene is safe. Vehicle has been removed. Fire units are on scene and can assist. There is 1 patient.

Initial assessment

General impression— Patient is supine on the ground. The patient's eyes are closed and he is not moving.

LOC— Localizes to pain.

Delegate spine—Direct team member to apply SMR.

Airway— Clear and open.

Breathing— Slow respirations with good chest movement.

Ventilation instructions— Give 100% oxygen and assist ventilations at a rate of 12-15/minute.

Circulation

Pulses— Carotid pulse weak and rapid. Radial pulse absent.

Bleeding— Severe bleeding from both legs.

Skin color, condition, and temperature— Pale, cold, clammy skin.

Decision— Rapid trauma survey due to mechanism and examination.

Rapid trauma survey

Head— Hematoma to the occiput that is tender to touch. (Patient moans.) Battles sign behind right ear and bloody fluid from right ear.

Neck— No obvious injury.

Trachea— Midline.

Neck veins— Flat.

Chest

Looking— No obvious injury.

Feeling— No obvious injury.

Listening— Breath sounds equal bilaterally. (Very slow when not being ventilated.)

Percussion—Normal.

Abdomen— Tender and distended.

Pelvis— Very unstable.

Extremities

Lower— Both legs are crushed and mangled from the upper thigh to the feet. There is continued bleeding from both legs. Distal pulses slightly diminished

Upper— No obvious injuries to the arms. Distal pulses absent and sensation present.

Exam of posterior— Minor abrasions on the back.

Decision:

Load and go due to mechanism and injuries. Patient is unstable. Should have 2 IV lines inserted, placed on monitor and will require intubation on route. Pelvic binder to be applied. Both legs require splinting and tourniquets or compression bandages to control bleeding. Notify the hospital that you have an unconscious crush injury patient with pelvic, leg and abdominal injuries.

Ongoing exam

History (limited information obtained from the coworkers).

Vital signs— BP 90/60, pulse 140 if fluids given. BP 80/40, pulse 160, if no fluids given.

Neurological

LOC— Localizes to pain.

Pupils— Right pupil is dilated and no reactive. Left pupil mid position and reactive.

Sensory— Localizes to pain.

Motor— Localizes to pain.

GCS— 8 (2/1/5).

Airway— Intubated.

Breathing— Assisted ventilations at 10-12/minute.

Circulation

Blood pressure— 90/60 if fluids given. 80/40 if no fluids given.

Pulses— 140, weak radial pulse if fluids given. 160, no radial pulse if no fluids given.

Skin color, condition, and temperature— Pale, cool and clammy.

Neck—

Trachea— No change.

Neck veins— No change.

Chest— No change.

Abdomen— More distended, rigid.

Focused assessment of injuries

1. Basilar skull fracture – head still draining bloody fluid from the ear.
2. Both legs crushed and mangled – bleeding controlled with tourniquets. Pulses now diminished.
3. Fractured pelvis.
4. Abdominal injuries.

Check interventions

Is the oxygen hooked up and turned on

Are IVs running at the correct rate?

ETT in trachea and ventilation rate correct?

Cardiac monitor and oxygen saturations?

Pelvic binding?

Tourniquets?

Secondary survey

Subjective changes— Patient is now unconscious.

History and vital signs— As above. If a second bolus is given, the BP is 100/60 and pulse 120.

ETCO₂: 12, waveform square.

Neurological

LOC— GCS 3 (1/1/1)

Pupils— Right pupil is dilated and non-reactive. Left pupil midpoint and reactive.

Sensory— No response.

Motor— No response.

Finger-stick glucose— 5.3 mmol/l (96 mg/dl).

Head— Battle sign behind the right ear. Bloody fluid from the right ear. Face stable . No drainage from the nose.

Airway— Intubated.

Breathing— Assisted at 10-12/minute.

Neck

Trachea— Midline.

Neck veins— Flat.

Circulation— Skin pale, cold and clammy. Bleeding controlled.

Chest

Looking— No obvious injury.

Feeling— No obvious injury.

Listening— Breath sounds equal with assisted ventilation.

Percussion—Normal.

Abdomen— Distended and rigid.

Pelvis— Do not examine again.

Extremities

Upper— No obvious injury.

Lower— Splinted and dressing.

ITLS Scenario 10 - Crush Injury by Motor Vehicle Reversing (Pelvic, Leg, Abdominal Injuries)

Scene Size Up	
Standard Precautions	Gloves. Goggles.
Scene Hazards	None. The vehicle has been removed.
Number of Patients	One.
Need for more help or equipment	Fire on scene and can assist.
Mechanism of Injury	The patient was crushed when a reversing vehicle pinned the patient against a wall.



Initial Assessment	
General Impression - Age, sex, position - Patient activity - Obvious Bleeding?	Pt. is found supine on the ground. The patient's eyes are closed. There is no movement.
LOC (AVPU)	Localizes to pain.
Delegate Spine	Direct team member to apply SMR.
Airway - Snoring? Gurgling? Stridor? Silence?	Clear and open.
Breathing - Rate, Depth, Effort	Slow respirations with good chest movement.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp - Deadly bleeding?	Radial absent, carotid weak and rapid. Pale, cold, clammy skin. Severe bleeding from both legs.



Rapid Trauma Survey	
Head - DCAP-BLS-TIC - Fluid leaks (ears / nose) - Raccoon Eyes - Battle's Signs	Hematoma to occiput. Patient moans when occiput is palpated. Bloody fluid from right ear. No. Behind right ear.
Neck - DCAP-BLS-TIC - Tracheal Deviation - JVD - Collar once checked	No obvious injury. Midline. Flat neck veins. Direct team member to apply.
Chest - Expose. - DCAP-BLS-TIC	Expose chest. No obvious injuries found.
Breath Sounds (2 points)	Present and equal. Slow when not ventilated.
Abdomen - Expose. - DCAP-BLS-TIC - Rigidity or distention	Expose abdomen. Tender.
Pelvis (DCAP-BLS-TIC)	Very unstable.
Lower Extremities - DCAP-BLS-TIC - Distal PMS	Both legs are crushed and mangled from upper thigh to feet. There is continued bleeding from both legs. Distal pulses slightly diminished.
Upper Extremities - DCAP-BLS-TIC - Distal PMS	No injuries detected. Distal pulses absent and sensation present.

Transport Decision / Packaging / Notification	
Transport Decision	Unstable, load and go.
Packaging	Ensure posterior is checked during move (minor abrasions on back).
Notification	Notify hospital immediately. Note that you have a unconscious crush injury patient with pelvic, leg and abdominal injuries.



Ongoing Exam (every 5 minutes for unstable pt)	
LOC (AVPU)	Localizes to pain.
Airway - Snoring? Gurgling? Stridor? Silence?	Intubated. DAI for advanced provider.
Breathing - Rate, Depth, Effort	Assisted ventilations.
Circulation - Pulse rate / rhythm / quality - Skin color / cond / temp	Radial absent, carotid weak and rapid. Pale, cool, clammy.
Reassess Vital Signs	BP 90/60, pulse 140. BP 80/40, pulse 160 if no fluids given.
Reassess Neck	No change.
Reassess Chest	No change.
Reassess Abdomen	More distention. Rigid.
Reassess interventions	Pelvic binding. Tourniquets applied



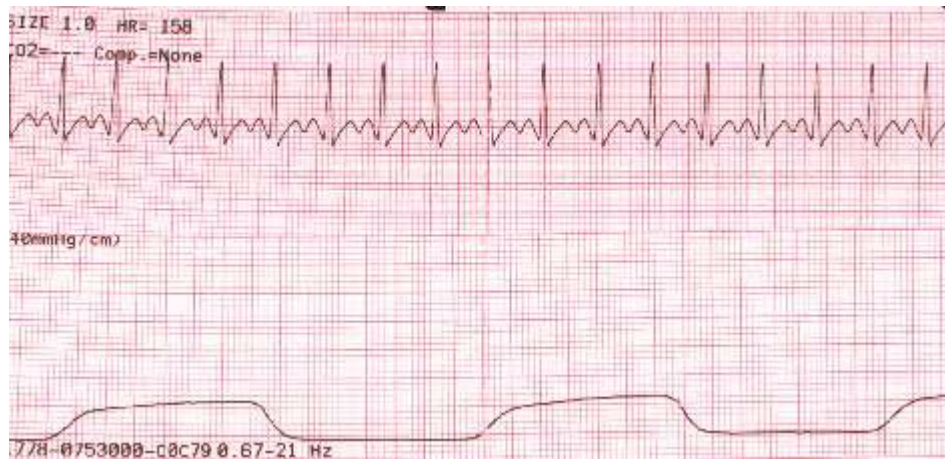
Secondary Survey	
History - Signs & Symptoms - Allergies - Medications - Past Medical History - Last Oral Intake - Events	Patient responds to pain. None. None. Diabetic medical alert bracelet. 4 hours ago. "The patient was helping to guide the driver reversing. The driver slipped off the brake, crushing the patient against the wall."
Vital Signs - Blood pressure - Heart rate / quality - Resp rate / quality - Initial ETCO2 - Waveform - SPO2 - Capillary blood glucose - LOC / GCS - Skin - Pupils	As above. If second bolus given, BP 100/60 160, weak at radial. (Pulse 120 if second bolus given) RR=18 if not 92% on O2. 12 Square No capture. 5.3 mmol/l (96 mg/dl) GCS 3 Pale, cool, clammy. L pupil midpoint and reactive. R pupil dilated and non-reactive. Note: It is acceptable to initiate IV access at this time, and bolus to a maximum systolic pressure of
Head to Toe - Head - Neck - Chest - Breath sounds - Abdomen - Pelvis - Lower extremities - Upper extremities	No injuries found. No injuries. No tracheal shift or JVD. No injuries found. Breath sounds present and equal. Distended and tender. Do not reexamine. Splinted and dressing. No obvious injury.

SCENARIO 10 CAPNOGRAPH & ECG

Initial ETCO₂: 12

Waveform: Square

Shock will keep the ETCO₂ low as long as the perfusion is low. Care must be taken not to allow hypoventilation or over ventilation of the patient. Without good perfusion, blood will not return to the heart to be blown off. Aggressively treat hypotension.



ITLS SCENARIO GRADE SHEET

Student Name:		Date:	Scenario #:	<input type="checkbox"/> Basic <input type="checkbox"/> Advanced	<input type="checkbox"/> Practice <input type="checkbox"/> Test <input type="checkbox"/> RT
Time Started:	Time Primary completed:	Time Transported:	Time Secondary completed :		

ACTION	✓	COMMENTS
PATIENT ASSESSMENT — PRIMARY SURVEY		
Scene Size-up		
Standard Precautions		
Scene Hazards		
Number of Patients		
Need for More Help or Equipment		
Mechanism of Injury		
General Impression		
Age, Sex, Weight		
General Appearance		
Body Position		
Position in Environment		
Patient Activity		
Obvious Severe Injury or Major Bleeding		
LOC AVPU		
Uncontrollable External Hemorrhage?		
Airway Snoring, Gurgling, Stridor, Silence		
Breathing Present? Rate, Depth, Effort		
Radial/Carotid Pulses		
Present? Rate, Rhythm, Quality		
Skin Color, Temp, Moisture, Capillary Refill		
Head and Neck		
Major facial injuries		
Bruising, swelling, penetrations		
Subcutaneous emphysema?		
Neck vein distention?		
Tracheal deviation?		
Chest Look: Asymmetry, Contusion, Penetrations, Paradoxical Motion, Chest Rise		
Feel: Tenderness, Instability, Creptitation		
Breath Sounds		
Present? Equal?		
If decreased breath sounds, percussion		
Heart Tones		
Abdomen		
Look: bruising, penetration/evisceration		
Gently palpate: tenderness, rigidity, distention		
Pelvis Deformity, penetrating wounds, TIC		
Lower Extremities		
Upper: swelling, deformity, TIC		
Lower: scan wounds, swelling, deformity		
Motor, sensory before transfer to backboard		
Upper Extremities		
Scan wounds, swelling, deformity		
Motor, sensory before transfer to backboard		
Posterior Penetrations, deformity, edema		
IF CRITICAL, TRANSFER TO AMBULANCE		

ACTION	✓	COMMENTS
Baseline Vital Signs HR, RR, BP		
History SAMPLE		
IF ALTERED MENTAL STATUS		
Pupils Size? Reactive? Equal?		
Glasgow coma scale		
Orientation, emotional state		
Signs of cerebral herniation		
Medical identification devices		
Blood glucose		
Critical transport decision		

ACTION	✓	COMMENTS
ONGOING ASSESSMENT		
Subjective Ask patient if changes in how feels		
Reassess mental status LOC, pupils		
If altered mental status Recheck GCS		
Reassess airway		
Reassess breathing and circulation		
Recheck vital signs		
Skin color, condition, temperature		
Check for neck vein distention		
Check for tracheal deviation		
Recheck chest		
Breath sounds Quality? Equal?		
Reassess heart sounds		
Reassess abdomen — if possible injury		
Development of tenderness, distention, rigidity		
Check all identified injuries		
For example:		
Lacerations for bleeding		
PMS distal to injuries on extremities		
Flail segments		
Pneumothorax		
Open chest wounds		
Check all interventions		
For example:		
ET tube for patency and position		
Oxygen for flow rate		
IVs for patency and fluid rate		
Seals on sucking chest wounds		
Patency of decompression needle		
Splints and dressings		
Impaled objects for stabilization		
If pregnant, body position		
Cardiac monitor, SpO ₂ , EtCO ₂		

GRADE KEY: ☒ Completed, skill performed in sequence
☐ D Delayed, performed out of sequence
☐ X Skill not performed, too late or incorrectly June 2011

ACTION	✓	COMMENTS
PATIENT ASSESSMENT — SECONDARY SURVEY		
Repeat Initial Assessment		
Repeat Vital Signs		
Consider Cardiac monitor, SpO ₂ , EtCO ₂		
LOC		
AVPU		
If conscious, orientation and emotional state		
If altered mental status, GCS		
If altered mental status, blood glucose		
If altered mental status, SpO ₂		
If altered mental status, consider naloxone		
Pupils Size, equality, response to light		
Motor Move fingers and toes?		
Sensation Feel fingers and toes?		
If unconscious, respond to pinch?		
Head		
DCAP-BLS-TIC		
Raccoon eyes		
Battle's sign		
Drainage from ears or nose		
Mouth		
Reassess airway		
Neck		
DCAP-BLS-TIC		
Neck vein distention?		
Tracheal deviation?		
Chest		
DCAP-BLS-TIC, paradoxical movement		
Instability and crepitation		
Breath sounds Present? Equal? Quality?		
If decreased breath sounds, percussion		
Heart sounds		
Recheck wound seals, injuries		
Abdomen		
Signs of blunt or penetrating trauma		
Palpate all quadrants for tenderness, rigidity		
Pelvis and Extremities		
DCAP-BLS-TIC		
PMS distal to injuries on extremities		
IF CRITICAL, TRANSPORT IMMEDIATELY		

CRITICAL ACTIONS	
	Completes scene size-up and uses universal precautions
	Performs initial assessment and interacts with patient
	Performs organized rapid trauma survey or focused exam
	Ensures spinal motion restriction when clinically indicated
	Ensures appropriate oxygenation and ventilation
	Recognizes and treats all life-threatening injuries
	Uses appropriate equipment and techniques
	Recognizes critical trauma, time, and transport priorities
	Performs Secondary Survey (when time permits)

IMPORTANT ACTIONS	
	Performs Ongoing Exam (when time permits)
	Utilizes time efficiently
	If critical, notifies medical direction early
	Gives appropriate report to medical direction
	Demonstrates acceptable skill techniques
	Displays leadership and teamwork

ADDITIONAL ACTIONS	
	Finish bandaging and splinting after Secondary Survey (when time permits)
	Vital signs every 5 minutes for critical patients, every 15 minutes for stable
	Repeats Ongoing Exam each time patient moved or intervention performed
	Repeats Ongoing Exam if patient condition worsens
	Appropriately interacts with patient, family, and bystanders
	Communicates with patient and/or bystanders

GRADE KEY: [✓] Completed, skill performed in sequence [D] Delayed, performed out of sequence [X] Skill not performed, too late or incorrectly	Nov 2015
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OVERALL GRADE	
[] Excellent	[] Good
[] Adequate	[] Inadequate
Comments:	
Lead Instructor Name (print):	Signature:
Instructor Name (print):	Signature:
Instructor Name (print):	Signature:

5

Instructor Training Course

OVERVIEW

Effective 2015, ITLS has adopted a hybrid model for Instructor training: the all-new ITLS Instructor Course, a Blended-Learning Approach. This course combines an online component with a classroom component in a program designed to build better instructors who can deliver ITLS training more effectively to a global audience.

To become an ITLS instructor, one must:

1. Successfully complete the ITLS Provider course they wish to teach (Advanced or Basic, or Pediatric). Individuals who complete an Advanced course are eligible to teach Basic and Advanced-level courses.
2. Earn the Instructor Potential designation by achieving specific scores on **both** the Written and Practical Exams at the Provider course:
 1. At least 86% on the Written Exam
 2. Excellent on the Patient Assessment Practical Exam
3. Purchase and complete the Instructor Course Online Component, an 8-module online course built on a foundation of adult education principles.
4. Attend an Instructor Course Classroom Component course, where they will review and practice facilitating skill stations, administering testing procedures, and evaluating student performance.
5. Be monitored teaching a lecture, skill station, and testing at an ITLS Provider course.
6. Receive their ITLS Instructor card and become eligible to instruct at ITLS courses.

The full ITLS Instructor program must be completed within 1 year, beginning with the Online Component and finishing with successful Instructor Monitoring.

Instructor Course Online Component Overview

The Instructor Course Online Component is built on a foundation of adult education principles. It is composed of interactive modules with video examples to illustrate the course's core teachings.

The Online Component includes 8 modules:

- History & Organization of ITLS
- The Learning Environment
- Learning Styles
- Delivery Methods
- Communication Styles
- ITLS Skill Stations
- Constructive Feedback
- Student Evaluations

The Instructor Course Online Component is approved by the Continuing Education Coordinating Board for Emergency Medical Services (CECBEMS) for a maximum of 3.25 continuing education hours (CEH).

It is essential that the Online Component be completed in full before the student attends the Classroom Component. The didactic content of the Online Component lays the framework for what will be taught in the Classroom Component.

Instructor Course Classroom Component Overview

The Classroom Component is a 6.75-hour hands-on course at which instructor candidates will review and practice facilitating skill stations, administering testing procedures, and evaluating student performance. The Classroom Component content and activities are outlined in a series of 5 Lesson Maps. The Lesson Maps provide the essential information needed to be able to successfully conduct the Classroom Component and correspond to the agenda below. The Lesson Maps were developed to ensure consistency in the delivery of the ITLS Instructor program. They provide guidance to ensure a great experience for instructor candidates and instructor trainers alike.

Lesson Map Topics

- Facilitating ITLS Cognitive Sessions – Lesson Map 1
- Facilitating ITLS Patient Assessment Scenarios – Lesson Map 2
- Facilitating ITLS Skill Stations – Lesson Map 3
- Facilitating ITLS Evaluation and Testing – Lesson Map 4
- Requirements of Instructor Monitoring – Lesson Map 5

Review the ITLS Instructor Course Classroom Component Guide for Coordinators for the Lesson Maps as well as the detailed requirements for running a successful Classroom Component Course.

Classroom Component Agenda

The Instructor Course Classroom Component is approved by the Continuing Education Coordinating Board for Emergency Medical Services (CECBEMS) for a maximum of 6.75 continuing education hours (CEH).

Time	Topic
0800	Welcome and Introduction
0800-0815	Review of Course Objectives
0815-0945	Facilitating ITLS Cognitive Sessions – Lesson Map 1
0945-1000	Break
1000-1200	Facilitating ITLS Patient Assessment Scenarios – Lesson Map 2
1200-1300	Lunch
1300-1430	Facilitating ITLS Skill Stations – Lesson Map 3
1430-1445	Break
1445-1600	Facilitating ITLS Evaluation and Testing – Lesson Map 4
1600-1615	Requirements of Instructor Monitoring – Lesson Map 5
1615	Adjourn

There are 7 skill stations taught in the 8th edition ITLS Provider textbook and accompanying course. (The Assessment Skills station is taught twice.) Instructors must be familiar with how to set up and teach all skill stations:

1. Assessment Skills
2. Airway Skills
3. Thoracic Trauma Skills
4. Vascular Access Skills
5. Spine Management Skills
6. Extremity Trauma Skills
7. Assessment Skills

INSTRUCTOR MONITORING REQUIREMENTS

Instructor candidates must be monitored teaching a lecture, skill station, and patient assessment testing at an ITLS Provider course. At the course, the instructor candidate is paired with an experienced instructor during skill station teaching and patient assessment scenario teaching and testing. Monitoring of the instructor candidate is usually done by an approved Affiliate Faculty member, though Chapters and Training Centres may permit other instructor roles such as course coordinators or course medical directors to participate in this responsibility.

It is your responsibility as a Classroom Component coordinator to be up-to-date on the procedures for instructor monitoring within your local Chapter or Training Centre. At the conclusion of the Instructor Course Classroom Component, you will give the instructor candidates information about how to complete the Instructor Monitoring process.

ITLS does not specify how many courses the instructor candidate must be monitored teaching. This is based on the monitoring instructor's observations and feedback. It is not unreasonable to expect some instructor candidates to attend a second course to build confidence. The decision should be agreed upon by the monitoring instructor and the instructor candidate, in conjunction with the Chapter or Training Centre administrators as needed.

Once the candidate has successfully completed the Instructor Monitoring requirements, the Affiliate Faculty or other monitoring instructor should complete the Instructor Monitoring Form (included in Appendix A) and submit it to the Chapter or Training Centre for records. Responsibility for the issuance of the Instructor Card and certificate may lie with the Chapter or Training Centre coordinator directly, or may be a responsibility of the Classroom Component coordinator. Again, make sure you are clear on the procedures within your ITLS Chapter or Training Centre.

6

The Provider Course

DIDACTIC CHAPTERS

SCENE SIZE-UP

STUDENT MANUAL – CHAPTER 1

ITLS instructors are responsible for knowing all the ITLS material in order to present their assigned topic in a simple and easy-to-understand manner that ties in with the other parts of the ITLS method. The lectures are designed to present both basic and advanced information geared to the emergency care of the trauma patient. Please keep this in mind as you give your lecture, and refrain from adding unnecessary advanced material more applicable to the hospital environment. This may be modified if you are teaching hospital personnel. Feel free to add material that is practical and pertinent, but remember to keep the lecture within the time allotted. The students should have read and studied the chapters. When you lecture you should present, reinforce, and explain only the key concepts. ITLS slides are not divided for advanced and basic courses. If you are teaching basic EMTs or first responders, please explain that they are not responsible for the advanced procedures mentioned on the slides; however, the inclusion of these procedures allows the students to be familiar with situations in which calling for an advanced unit, if available, would be beneficial.

Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Discuss the steps of the scene size-up.
2. List the two basic mechanisms of motion injury.
3. Identify the three collisions associated with a motor vehicle collision (MVC), and relate potential patient injuries to deformity of the vehicle, interior structures, and body structures.
4. Name the five common forms of MVCs.
5. Describe potential injuries associated with proper and improper use of seat restraints, head rests, and air bags in a head-on collision.
6. Describe potential injuries from rear-end collisions.
7. Describe the three assessment criteria for falls, and relate them to anticipated injuries.
8. Identify the two most common forms of penetrating injuries, and discuss associated mechanisms and extent of injuries.
9. Relate five injury mechanisms involved in blast injuries and how they relate to scene size-up and patient assessment injuries.

Key Lecture Points

1. Explain the relationship of time to definitive care and trauma patient survival and how this affects our actions at the scene.
2. Explain the steps of the scene size-up and the importance of each step.
3. Explain the importance of being aware of mechanisms of injury.

4. Briefly review the concept of transfer of energy.
5. Stress the concept of the “three collisions.”
6. Briefly review the highlights of specific situations:
 - a. Large vehicle accidents:
 - Frontal deceleration—effect on driver and passengers.
 - Lateral impact.
 - Rear impact.
 - Rollover.
 - Effect of restraints—lap belts, cross-chest lap belts, and air bags.
 - Tractor accidents.
 - b. Small vehicle accidents:
 - Motorcycles.
 - All-terrain vehicles.
 - Personal watercraft.
 - Snowmobiles.
 - c. Pedestrian injuries.
 - d. Falls.
 - e. Penetrating injuries:
 - Knives.
 - Gunshot wounds.
 - f. Blast scenes and injuries.

TRAUMA ASSESSMENT AND MANAGEMENT

STUDENT MANUAL – CHAPTER 2

ITLS instructors are responsible for knowing all the ITLS material in order to present their assigned topic in a simple and easy-to-understand manner that ties in with the other parts of the ITLS method. The lectures are designed to present both basic and advanced information geared to the pre-hospital care of the trauma patient. Please keep this in mind as you give your lecture, and refrain from adding unnecessary advanced material more applicable to the hospital environment. This may be modified if you are teaching hospital EMS personnel. Feel free to add material that is practical and pertinent, but remember to keep the lecture within the time allotted. The students should have read and studied the chapters. When you lecture you should present, reinforce, and explain only the key concepts. ITLS slides are not divided between advanced and basic courses. If you are teaching basic EMTs or first responders, please explain that they are not responsible for the advanced procedures mentioned on the slides; however, the inclusion of these procedures allows the students to be familiar with situations in which calling for an advanced unit, if available, would be beneficial.

Note: Chapter 21 is not core lecture material for the Basic ITLS course. Prior to giving the Assessment and Initial Management, the faculty should review Chapter 21 (see Table 21-1).

Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Outline the steps in trauma assessment and management.
2. Describe the ITLS Primary Survey.
3. Explain the initial assessment and how it relates to the rapid trauma survey and the focused exam.
4. Identify the situations when the initial assessment can be interrupted.
5. Describe when critical interventions should be made and where to make them.
6. Identify which patients have critical conditions and how they should be managed.
7. Describe the ITLS Ongoing Exam.
8. Describe the ITLS Secondary Survey.

Key Lecture Points

1. The concept of simultaneous assessment (team leader) and delegated intervention (team members) in life-threatening emergencies needs to be stressed (the “Fix It” process).
2. Note serious external hemorrhage should be recognized in the general impression (C-A-B-C).
3. Point out that the initial assessment is interrupted only for airway obstruction, if the scene becomes too dangerous, or if there is the need to perform CPR.
4. The step-by-step assessment scheme must be taught.
5. Emphasize the need to get the critically injured patient out of the field and to an appropriate hospital as quickly as possible. Emphasize that scene time of 5 minutes or less is the goal.
6. Discuss and stress that the Ongoing Exam comes after the Primary Survey and before the Secondary Survey.
7. Stress that the Ongoing Exam should be repeated any time the patient’s condition worsens.

AIRWAY MANAGEMENT

STUDENT MANUAL – CHAPTER 4

ITLS instructors are responsible for knowing all the ITLS material in order to present their assigned topic in a simple and easy-to-understand manner that ties in with the other parts of the ITLS method. The lectures are designed to present both basic and advanced information geared to the pre-hospital care of the trauma patient. Please keep this in mind as you give your lecture, and refrain from adding unnecessary advanced material more applicable to the hospital environment. This may be modified if you are teaching hospital EMS / critical care personnel. Feel free to add material that is practical and pertinent, but remember to keep the lecture within the time allotted. The students should have read and studied the chapters. When you lecture you should present, reinforce, and explain only the key concepts. ITLS slides are not divided between advanced and basic courses. If you are teaching basic EMTs or first responders, please explain that they are not responsible for the advanced procedures mentioned on the slides; however, the inclusion of these procedures allows the students to be familiar with situations in which calling for an advanced unit, if available, would be beneficial. Completing instruction in this course does not allow a provider to function outside their scope of practice.

Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Describe the anatomy and physiology of the respiratory system.
2. Explain the importance of observation as it relates to airway control.
3. Describe methods to deliver supplemental oxygen to the trauma patient.
4. Briefly describe the indications, contraindications, advantages, and disadvantages of the following airway support devices: bag-valve masks, blind insertion airway devices, endotracheal intubation, flow-restricted oxygen-powered ventilation devices, nasopharyngeal airways, and oropharyngeal airways.
5. Describe the predictors of difficult mask ventilation and endotracheal intubation.
6. Discuss apneic oxygenation and external laryngeal manipulation.
7. Describe the essential components of an airway kit.

Key Lecture Points

1. Review anatomy of airway and identify key landmarks.
2. The differences in airway management of the trauma patient as opposed to the medical patient need to be clearly emphasized. Particular emphasis needs to be placed on stabilizing the cervical spine and limiting motion of the cervical spine during airway maneuvers.
3. Stress that movement, especially hyperextension of the cervical spine during airway maneuvers, may do great damage.
4. Continuous monitoring of the airway to be sure it remains patent. Stress the point that suction must be immediately available.
5. High-flow oxygen should be provided to trauma patients. Discuss oxygen settings and that the target pulse oximeter reading should be 95%.

6. Remind students that the oropharyngeal airway is for use only in the unconscious patient with no gag reflex and that absence of gag reflex indicates possible need for endotracheal tube (ETT).
7. Review airway management in the conscious versus unconscious patient.
8. Stress that emergency care providers tend to inadvertently hyperventilate patients. The starting ventilatory rate should be about 8 breaths per minute. Use of pulse oximetry is recommended.
9. Discuss capnography as the standard for confirming and monitoring the ETT position.
10. Mention external larynx manipulation (ELM) as a means of visualizing the vocal cords
11. Discuss the "BOOTS" mnemonic as a predictor of the patient who will be difficult to ventilate with a bag-valve mask.
12. Review management of the prone patient and the patient with profuse upper airway bleeding.

THORACIC TRAUMA

STUDENT MANUAL – CHAPTER 6

ITLS instructors are responsible for knowing all the ITLS material in order to present their assigned topic in a simple and easy-to-understand manner that ties in with the other parts of the ITLS method. The lectures are designed to present both basic and advanced information geared to the pre-hospital care of the trauma patient. Please keep this in mind as you give your lecture, and refrain from adding unnecessary advanced material more applicable to the hospital environment. This may be modified if you are teaching hospital EMS personnel. Feel free to add material that is practical and pertinent, but remember to keep the lecture within the time allotted. The students should have read and studied the chapters. When you lecture you should present, reinforce, and explain only the key concepts. ITLS slides are not divided between advanced and basic courses. If you are teaching basic EMTs or first responders, please explain that they are not responsible for the advanced procedures mentioned on the slides; however, the inclusion of these procedures allows the students to be familiar with situations in which calling for an advanced unit, if available, would be beneficial.

Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. List the major symptoms of thoracic trauma.
2. Describe the signs of thoracic trauma.
3. List the immediate life-threatening thoracic injuries.
4. Define flail chest in relation to associated physical findings and management.
5. Explain the pathophysiology and management of an open pneumothorax.
6. Explain the hypovolemic and respiratory compromise pathophysiology and management in massive hemothorax.
7. Describe the clinical signs of a tension pneumothorax in conjunction with appropriate management. Contrast those with the clinical signs of massive hemothorax.
8. List three indications to perform emergency chest decompression.
9. Identify the physical findings (including Beck's triad) of cardiac tamponade.
10. Explain the cardiac involvement and management associated with blunt injury to the chest.

Key Lecture Points

1. Briefly review the anatomy of the chest, particularly the great vessels.
2. Emphasize load-and-go conditions and discuss why these conditions are so critical:
 - a. *Massive hemothorax with shock.* Explain that when massive hemothorax has occurred, as evidenced by dullness to percussion and diminished breath sounds in the base of the affected lung, massive hemorrhage has occurred into the chest with major blood vessel disruption and massive blood loss. If these patients are not rapidly taken to surgery, they usually die.
 - b. *Tension pneumothorax.* Explain how the increased pressure in the chest reduces blood return to the heart, causing reduction in cardiac output, and thus producing shock. Stress the signs and symptoms of the tension pneumothorax (review the Primary Survey) and how critical it is not to leave out steps in the Primary Survey, which would prevent the identification of this problem.

- c. *Penetrating chest trauma with shock.* Explain that the penetrating chest injury with resulting evidence of shock is a load-and-go situation because of the many serious and potentially lethal conditions that may result from the penetrating injury which need surgical intervention.
3. Discuss the mechanics of airflow during inspiration and expiration. Discuss how the presence of an open wound into the pleural space decreases air movement through the tracheobronchial tree.
4. Discuss the pathophysiology of the flail chest and the management of this problem: assisted ventilation and prevention of movement of the flail segment if it is decreasing air movement through the tracheobronchial tree. Initially stabilize with manual pressure and then stabilize with bulky dressings taped to the chest wall when the patient is placed on a stretcher. Point out that intubation (patient usually has a gag reflex) and positive-pressure ventilation are the most effective methods to stabilize the flail and oxygenate the patient.
5. A review of the mechanism of injury in chest trauma is appropriate. Stress the importance of anticipating serious chest trauma or the potential for life-threatening injury even before deterioration has occurred. This is particularly important in those patients with evidence of major chest trauma.

SHOCK

STUDENT MANUAL – CHAPTER 8

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Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. List the four components of the vascular system necessary for normal tissue perfusion.
2. Describe the symptoms and signs of shock in the order that they develop, from the very least to the very worst.
3. Describe the four common clinical shock syndromes.
4. Explain the pathophysiology of hemorrhagic shock, and compare it to the pathophysiology of mechanical and neurogenic shock.
5. Describe the management of the following:
 - a. Hemorrhage that can be controlled.
 - b. Hemorrhage that cannot be controlled.
 - c. Nonhemorrhagic shock syndromes.
6. Discuss the use of hemostatic agents for uncontrolled extremity hemorrhage.
7. Discuss the current indications for the use of IV fluids in the treatment of hemorrhagic shock.
8. Describe when it is appropriate to use tranexamic acid (TXA) in the management of hemorrhage.

Key Lecture Points

1. Discuss the modern concept of “shock”: threat to normal cell function caused by diminished tissue perfusion and/or hypoxia.
2. Discuss the pathophysiology of hemorrhagic shock, including the classic signs and symptoms and their causes.
3. Discuss the three shock syndromes:
 - a. Low-volume (absolute hypovolemia).
 - b. High-space (relative hypovolemia).
 - c. Mechanical (cardiogenic or mechanical/ obstructive).
4. Discuss the management of shock:

- a. Posttraumatic hemorrhage:
 - Exsanguinating external hemorrhage that can be controlled.
 - Exsanguinating external hemorrhage that cannot be controlled.
 - Exsanguinating internal hemorrhage.
 - b. Nonhemorrhagic shock:
 - Mechanical shock.
 - High-space shock.
5. Discuss the use of capnography to monitor shock.
 6. Discuss the use of tourniquets and hemostatic agents in the situation of exsanguinating hemorrhage.
 7. Stress that shock is often recognized too late and treated insufficiently. Point out that delaying transport of a patient in shock is a critical mistake.

HEAD TRAUMA AND TRAUMATIC BRAIN INJURY

STUDENT MANUAL – CHAPTER 10

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Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Describe the anatomy of the head and brain.
2. Describe the pathophysiology of traumatic brain injury.
3. Explain the difference between primary and secondary brain injury.
4. Describe the mechanisms for the development of secondary brain injury.
5. Describe the assessment of the patient with a head injury.
6. Describe the prehospital management of the patient with a traumatic brain injury.
7. Recognize and describe the management of the cerebral herniation syndrome.
8. Identify potential problems in the management of the patient with a traumatic brain injury.

Key Lecture Points

1. Review the anatomy of the brain and head.
2. Discuss the physiology of cerebral perfusion (blood flow), and explain why hyperventilation is no longer recommended except in cases of herniation syndrome.
3. Emphasize the control of the airway in the patient with an altered level of consciousness. Stress that suction must be available at all times.
4. Stress that a patient with a serious brain injury (Glasgow coma score of 8 or less) will not tolerate hypoxia or hypotension. With a serious brain injury, maintain the blood pressure between 110 and 120 mmHg systolic.
5. Mention that prehospital providers tend to inadvertently hyperventilate head-injured patients. Stress that, if available, capnography should be used to guide ventilatory support and prevent inadvertent hyperventilation.
6. Mention the aspects of the Glasgow coma score and that each part should be recorded, not just the total score. This score should always be recorded if there is altered mental status.
7. Discuss the indications for hyperventilation in the patient with brain herniation.

SPINAL TRAUMA AND PATIENT -CENTERED SPINAL MOTION RESTRICTION STUDENT MANUAL – CHAPTER 11

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Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Explain the normal anatomy and physiology of the spinal column and spinal cord.
2. Define spinal motion restriction (SMR) and its relationship to safe patient transport.
3. Describe elements of injury, history, and assessment that may assist in determining which patients will benefit from spinal motion restriction (SMR).
4. Describe at least one mechanism of injury for which spinal motion restriction (SMR) can cause a significant decrease in survival.
5. Explain the difference between Emergency Rescue and rapid extrication techniques, and describe the appropriate utilization of each.
6. Differentiate between neurogenic shock from hemorrhagic shock based on the clinical findings.

Key Lecture Points

1. Briefly review the anatomy of the spine.
2. Reinforce that any multiple trauma patient who has an altered level of consciousness may have a cervical-spine injury and because of the altered LOC, cannot be “cleared.” Appropriate precautions must be taken.
3. Stress that SMR should be applied to patients with the appropriate history and clinical findings.
4. Briefly discuss the signs, symptoms, and treatment of neurogenic shock.
5. Stress documentation of the brief neurological exam (movement and sensation of hands and feet) before and after extrication or movement of the patient with a suspected spinal injury.
6. Discuss that if indicated, SMR includes cervical collar and securing the patient to a transport stretcher.
7. Stress that the spine board is a transfer device and not a transport device. Patients can be removed from the spine board when appropriate.

8. Emphasize that SMR on a stretcher or long spine board MANDATES airway protection by the rescuer due to the patient being unable to protect their airway from aspiration.
9. Discuss the indications for rapid extrication (without using short boards or KED-type devices). Primary Survey of the patient identifies a condition that requires immediate intervention that cannot be done in the entrapped area, such as:
 - a. Airway obstruction that cannot be relieved by jaw thrust or finger sweep.
 - b. Cardiac or respiratory arrest.
 - c. Chest or airway injuries requiring ventilation or assisted ventilation.
 - d. Deep shock or bleeding that cannot be controlled.
10. Note that there are other situations that are so desperate that you may not have time to use any technique and Emergency Rescue is warranted to pull the patient to safety. The need for Emergency Rescue is identified during the scene size-up with circumstances that may immediately endanger the patient and the rescuers, such as:
 - a. Fire or immediate danger of fire.
 - b. Danger of explosion.
 - c. Rapidly rising water.
 - d. Structure in danger of collapse.
 - e. Continuing toxic exposure.
11. Mention that short backboard–type SMR devices may be difficult to apply and ineffective with pregnant and very obese patients.
12. Briefly review management of unusual circumstances, such as:
 - a. Closed space rescue.
 - b. Water rescue.
 - c. Prone and standing patients.
 - d. Pediatrics.
 - e. Geriatrics.
 - f. Helmet removal (stress that studies have found that rescue scissors will not efficiently remove face masks).
 - g. Obese patients.
 - h. Neck or face wounds.
13. Describe the problems associated with prolonged immobilization on a backboard.

ABDOMINAL TRAUMA

STUDENT MANUAL – CHAPTER 13

ITLS instructors are responsible for knowing all the ITLS material in order to present their assigned topic in a simple and easy-to-understand manner that ties in with the other parts of the ITLS method. The lectures are designed to present both basic and advanced information geared to the pre-hospital care of the trauma patient. Please keep this in mind as you give your lecture, and refrain from adding unnecessary advanced material more applicable to the hospital environment. This may be modified if you are teaching hospital EMS personnel. Feel free to add material that is practical and pertinent, but remember to keep the lecture within the time allotted. The students should have read and studied the chapters. When you lecture you should present, reinforce, and explain only the key concepts. ITLS slides are not divided between advanced and basic courses. If you are teaching basic EMTs or first responders, please explain that they are not responsible for the advanced procedures mentioned on the slides; however, the inclusion of these procedures allows the students to be familiar with situations in which calling for an advanced unit, if available, would be beneficial.

Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Identify the basic anatomy of the abdomen, and explain how abdominal and chest injuries may be related.
2. Differentiate between blunt and penetrating injuries, and identify characteristic complications associated with each.
3. Describe the treatment required for the patient with protruding viscera.
4. Describe how to identify and stabilize a pelvic fracture, why this is important, and contraindications.
5. Relate how injuries apparent on the exterior of the abdomen reflect possible damaged underlying structures.
6. Describe the findings indicating possible intra-abdominal injuries based on history, physical examination, and mechanism of injury (MOI).
7. List the critical interventions for patients with abdominal injuries.

Key Lecture Points

1. Review the anatomy of the abdomen.
2. Stress the importance of abdominal injuries with regard to morbidity and mortality associated with major trauma.
3. Mention that a distended abdomen is a very late sign of hemorrhage within the abdomen.
4. Mention that abdominal trauma with shock is a serious finding and must be rapidly managed including rapid transportation to the appropriate medical facility.
5. Discuss pelvic fractures and their potential for massive bleeding.

EXTREMITY TRAUMA

STUDENT MANUAL – CHAPTER 14

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Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Prioritize extremity trauma in the assessment and management of life-threatening injuries.
2. Discuss the major immediate and short-term complications and treatment of the following extremity injuries: amputations, crush injuries, dislocations, fractures, impaled objects, neurovascular injuries, open wounds, and sprains and strains.
3. Discuss the pathophysiology of compartment syndrome and describe some extremity injuries that are likely to develop this complication.
4. Describe the potential amount of blood loss from pelvic and femur fractures.
5. Discuss major mechanisms of injury, associated injuries, potential complications, and management of injuries to the following: clavicle and shoulder, elbow, forearm and wrist, hand, pelvis, hip, femur, knee, tibia and fibula (including ankle), and foot.

Key Lecture Points

1. Stress that during the ITLS Primary Survey the extremities **MUST** be examined for exsanguinating blood loss.
2. In the critical trauma patient, the treatment of extremity trauma, except to control exsanguinating bleeding, is a lower priority compared to management of the load-and-go condition. In such patients, traction splints or other splints should not be applied on scene; rather, a long spine board should be employed initially. Other splints can be applied during transport if there is time.
3. Estimated blood loss in major extremity fractures should be discussed.
4. Provide a brief overview of the types of splints available.
5. Stress that the rescuer must note neurovascular status of the extremities before and after splinting procedures.
6. Mention that when there is bleeding that cannot be controlled by pressure, use of a tourniquet and/or hemostatic agents is warranted.

BURNS

STUDENT MANUAL – CHAPTER 16

ITLS instructors are responsible for knowing all the ITLS material in order to present their assigned topic in a simple and easy-to-understand manner that tie in with the other parts of the ITLS method. The lectures are designed to present both basic and advanced information geared to the prehospital care of the trauma patient. Please keep this in mind as you give your lecture, and refrain from adding unnecessary advanced material more applicable to the hospital environment. This may be modified if you are teaching hospital EMS personnel. Feel free to add material that is practical and pertinent, but remember to keep the lecture within the time allotted. The students should have read and studied the chapters. When you lecture you should present, reinforce, and explain only the key concepts. ITLS slides are not divided between advanced and basic courses. If you are teaching basic EMTs or first responders, please explain that they are not responsible for the advanced procedures mentioned on the slides; however, the inclusion of these procedures allows the students to be familiar with situations in which calling for an advanced unit, if available, would be beneficial.

Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Identify the basic anatomy of the skin, including:
 - a. Epidermal and dermal layers.
 - b. Structures found within.
2. List the basic functions of the skin.
3. Classify burns as a function of burn depth.
4. Estimate depth of burn based on skin appearance.
5. Estimate extent of burn using the rule of nines.
6. Identify complications and describe the initial management of:
 - a. Thermal burns.
 - b. Chemical burns.
 - c. Electrical burns.
7. List situations, symptoms and physical signs that:
 - a. Indicate thermal airway or inhalation injury.
 - b. Suggest carbon monoxide poisoning.
8. Discuss how carbon monoxide causes hypoxia.
9. Describe the initial treatment for carbon monoxide poisoning.
10. Identify which patients may require transport to a burn center.

Key Lecture Points

1. Review the types and classifications of burns.
2. Discuss the management of different types of burns. A note should be made that while the burns should be cooled briefly to control ongoing heat injury, burns should not be subjected to prolonged cold exposure due to the risk of hypothermia. Mention use of clean sterile sheets as initial burn dressing and to avoid use of creams and ointments.
3. Discuss the complications of major burns, such as airway compromise and later fluid loss.
4. Discuss the need to consider the mechanism of injury, especially with regard to the potential

for carbon monoxide or other toxic gas inhalation. A note should be made as to whether this injury occurred in an enclosed space.

5. Stress the need for maintaining body temperature.
6. Discuss the treatment of carbon monoxide poisoning. Unless otherwise indicated, 100% oxygen should be used in the major burn patient until he can be further evaluated.
7. Discuss the findings that suggest inhalation injury, and stress that the rescuer must always be alert to this injury.
8. Stress that the emergency care provider should record the time that the burn occurred.
9. Review chemical burns and how their treatment differs from that of thermal burns.
10. Review electrical burns and lightning burns, and discuss their treatment.
11. Stress the danger of becoming a victim when dealing with electrical burns.
12. Mention that the emergency care providers should be alert to the signs of child abuse when dealing with burned children.

PEDIATRIC TRAUMA

STUDENT MANUAL – CHAPTER 17

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Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Describe effective techniques for interacting with pediatric patients and gaining the confidence of children and their parents.
2. Predict pediatric injuries based on common mechanisms of injury.
3. Describe the ITLS Primary and Secondary Surveys in the pediatric patient.
4. Demonstrate understanding of the need for immediate transport in potentially life-threatening circumstances, regardless of the availability of immediate parental consent.
5. Differentiate the equipment needs of pediatric patients from those of adults.
6. Describe the various ways to perform spinal motion restriction (SMR) on a child and how this differs for an adult.
7. Discuss the need for involvement of EMS personnel in prevention programs for parents and children.

Key Lecture Points

1. Discuss the differences and similarities between the adult and pediatric patient with regard to trauma management.
2. Cover the various baseline vital signs expected for the different age groups.
3. Note that the ITLS Primary Survey sequence is the same for pediatric as for adult patients.
4. Note that children will appear to be stable with fewer warning signs of deterioration, which can be followed by sudden disastrous decompensation.
5. Mention that transport of small children in their car seats with appropriate additional stabilization may be acceptable under certain conditions.

GERIATRIC TRAUMA

STUDENT MANUAL – CHAPTER 18

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Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Describe the physiological and cognitive changes that occur with aging.
2. Explain how these changes can affect your assessment and management of the geriatric trauma patient.
3. Describe the assessment of the geriatric trauma patient.
4. Describe challenges in the management of the geriatric trauma patient.

Key Lecture Points

1. Review pathophysiology of aging by systems.
2. Stress that when doing field triage, geriatric patients have more injuries and worse outcomes than younger patients who are subjected to the same mechanisms.
3. Review patient assessment, and relate how aging affects assessment and interventions.
4. Discuss potential problems with spinal motion restriction in elderly patients.

TRAUMA IN PREGNANCY

STUDENT MANUAL – CHAPTER 19

ITLS instructors are responsible for knowing all the ITLS material in order to present their assigned topic in a simple and easy-to-understand manner that ties in with the other parts of the ITLS method. The lectures are designed to present both basic and advanced information geared to the pre-hospital care of the trauma patient. Please keep this in mind as you give your lecture, and refrain from adding unnecessary advanced material more applicable to the hospital environment. This may be modified if you are teaching hospital EMS personnel. Feel free to add material that is practical and pertinent, but remember to keep the lecture within the time allotted. The students should have read and studied the chapters. When you lecture you should present, reinforce, and explain only the key concepts. ITLS slides are not divided between advanced and basic courses. If you are teaching basic EMTs or first responders, please explain that they are not responsible for the advanced procedures mentioned on the slides; however, the inclusion of these procedures allows the students to be familiar with situations in which calling for an advanced unit, if available, would be beneficial.

Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Understand the dual goals in managing the pregnant trauma patient.
2. Describe the physiologic changes associated with pregnancy.
3. Understand the pregnant trauma patient's response to hypovolemia.
4. Describe the types of injuries most commonly associated with the pregnant trauma patient.
5. Describe the initial assessment and management of the pregnant trauma patient.
6. Discuss trauma prevention in pregnancy.

Key Lecture Points

1. Review the general information included in the lecture slides, including the information associated with the various trimesters.
2. Note that the outcome for the fetus generally depends on the well-being of the mother. Therefore, if the mother has adequate blood volume, blood pressure, and circulation, then the fetus will do well. Use the quote, "Death of the fetus in the trauma situation is most often associated with the death of the mother."
3. Mention that the treatment of shock is the same for pregnant patients as for other patients.
4. Emphasize that the physiological changes of pregnancy may make it more difficult to diagnose the shock state in the mother.
5. Stress that uterine obstruction of venous blood flow may cause hypotension in the supine patient ("supine hypotension syndrome") and thus must be prevented by rolling the patient or backboard to the left.
6. Note that there is an increased rate of fetal demise 2 or 3 days following major trauma to the mother.
7. Mention that short backboard-type devices may be ineffective as an SMR device in the pregnant patient because of the difficulty with adequately securing the straps. This concern also applies to the very obese patient.

THE IMPAIRED PATIENT

STUDENT MANUAL – CHAPTER 20

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Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. List signs and symptoms of patients under the influence of alcohol and/or drugs.
2. Describe some strategies you would use to help ensure cooperation during assessment and management of a patient under the influence of alcohol and/or drugs.
3. Define excited delirium.
4. List the special considerations for trauma assessment and management of patients in whom substance abuse is suspected.

Key Lecture Points

1. Review commonly abused drugs and their common signs and symptoms. This should include those most commonly used in the community where the course is taught.
2. Review clues of drug use by the patient.
3. Review the pertinent history you should obtain when managing a patient who may be under the influence of drugs.
4. Explain how to interact with a patient who is under the influence of drugs.
5. Explain how to manage the patient who is injured, under the influence, and uncooperative. Be familiar with and discuss your local laws regarding restraining a patient.

TRAUMA ARREST

STUDENT MANUAL – CHAPTER 21

ITLS instructors are responsible for knowing all the ITLS material in order to present their assigned topic in a simple and easy-to-understand manner that ties in with the other parts of the ITLS method. The lectures are designed to present both basic and advanced information geared to the pre-hospital care of the trauma patient. Please keep this in mind as you give your lecture, and refrain from adding unnecessary advanced material more applicable to the hospital environment. This may be modified if you are teaching hospital EMS personnel. Feel free to add material that is practical and pertinent, but remember to keep the lecture within the time allotted. The students should have read and studied the chapters. When you lecture you should present, reinforce, and explain only the key concepts. ITLS slides are not divided between advanced and basic courses. If you are teaching basic EMTs or first responders, please explain that they are not responsible for the advanced procedures mentioned on the slides; however, the inclusion of these procedures allows the students to be familiar with situations in which calling for an advanced unit, if available, would be beneficial.

Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Identify treatable causes of traumatic cardiopulmonary arrest.
2. Describe the proper evaluation and management of the patient in traumatic cardiopulmonary arrest.
3. Identify patients in traumatic cardiac arrest for whom you should withhold resuscitation attempts.

Key Lecture Points

1. Briefly review the causes of cardiopulmonary arrest in the trauma situation.
2. Review the position statements (National Association of EMS Physicians and the American College of Surgeons Committee on Trauma) on withholding or terminating resuscitation of prehospital cardiopulmonary arrest. Discuss any local protocols that impact this decision.
3. Review the guidelines about when to attempt resuscitation and the general management of the trauma arrest.
4. Compare and contrast the management of the trauma arrest to medical cardiac resuscitation guidelines.
5. Remind students always to think of treatable causes (hemorrhagic shock, tension pneumothorax, and pericardial tamponade) when evaluating the trauma arrest patient.
6. Stress rapid transport of the trauma arrest patient.

STANDARD PRECAUTIONS AND TRANSMISSION-BASED PRECAUTIONS

STUDENT MANUAL – CHAPTER 22

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Chapter Objectives

Upon completion of this lecture, the student should be able to:

1. Discuss the three most common bloodborne viral illnesses to which emergency care providers are likely to be exposed in the provision of patient care.
2. Discuss the signs and symptoms of airborne and droplet-transmitted diseases, and describe protective measures to reduce possible exposure to them.
3. Describe precautions emergency care providers can take to prevent exposure to blood and other potentially infectious materials (cerebrospinal fluid, synovial fluid, amniotic fluid, pericardial fluid, pleural fluid, or any fluid with gross visible blood).
4. Describe general procedures for emergency care providers to follow if they are accidentally exposed.
5. Discuss multidrug-resistant organisms, and describe precautions for care of patients with multidrug-resistant illnesses and airborne/droplet diseases.
6. Be able to identify those situations in which a higher level of personal protective equipment is needed, beyond the basic equipment used in daily patient care.
7. List vaccines and immunizations recommended for EMS personnel.

Key Lecture Points

1. Explain that trauma care involves exposure to blood and body fluids, and to the diseases that are spread by these means.
2. Explain the difference between active and passive immunity.
3. Describe the diseases caused by hepatitis B, hepatitis C, and HIV; describe recommendations for post-exposure prophylaxis.
4. Discuss tuberculosis and infections by multidrug-resistant organisms, and explain precautions to prevent contracting these diseases.
5. Discuss vaccines and immunizations recommended for EMS personnel.
6. Describe personal protection, and handling and cleaning of items exposed to blood or other potentially infectious materials (OPIM).
7. Describe reporting of exposure to blood or OPIM.

SKILL STATIONS

ASSESSMENT SKILLS: SKILL STATION 1

STUDENT MANUAL – CHAPTER 3

Before beginning, review “Skill Stations” (see Chapter 3 in instructor guide).

Minimum instructors needed: 1.

Recommended time for this station is 30 minutes.

Objectives

At the conclusion of this station, the student will be able to:

1. ITLS Primary Survey:
 - a. Correctly perform the ITLS Primary Survey.
 - b. Identify within two minutes patients requiring immediate transport.
 - c. Perform critical interventions.
2. ITLS Ongoing Exam and ITLS Secondary Survey:
 - a. Correctly perform the ITLS Ongoing Exam.
 - b. Correctly perform the ITLS Secondary Survey.
 - c. Perform critical interventions.
 - d. Demonstrate proper team communications.
3. Assessment and Management of the Trauma Patient:
 - a. Demonstrate the proper sequence of rapid assessment and the management of the trauma patient.

Important Points

1. The time allowed (30 minutes) is very short. You must begin immediately.
2. After viewing the patient assessment video during the patient assessment lecture, each group of students will rotate through patient assessment and management twice.
3. Every student should be given a grade sheet for study purposes.
4. Students not actually participating in the assessment should follow along with the grade sheet.

Equipment List

You will have two stations, so double the amounts below.

<i>Item</i>	<i>Quantity</i>
Live model	1
Moulage kit	1
Rigid cervical collar	1
Trauma box	1
BP cuff	1
Stethoscope	1

Gauze rolls	2
4" elastic wraps	2
4 × 4 gauze pads (unsterile)	6
Wide tape (rolls)	1
Oxygen mask and nasal prongs	1
Long backboard with straps	1
Head immobilizer	1
One-way valve/ Chest seal	1
Grade sheets	12

Procedure

• ITLS Primary Survey

Directions to students:

During the ITLS class, short written scenarios will be used along with a model to simulate the patient. You will divide into teams to practice conducting an initial assessment, performing critical interventions, and making a transport decision. Each member of the team must practice being team leader at least once. The critical information represents the answers you should be seeking at each step of the survey. The Treatment Decision Tree below represents the actions that should be taken (personally or delegated) in response to your assessment.

Assessment

SCENE SIZE-UP

Safety

Number of patients

Extrication/rescue needed

Mechanisms of injury

Action

Put on gloves, protective clothing. Remove hazards or patient from hazards.

Call for help, if needed.

Call for special equipment, if needed

Suspect appropriate injuries (e.g., cervical spine).

GENERAL IMPRESSION

Age, sex, weight

Position (in surroundings, body position/posture)

Activity

Obvious major injuries

Major bleeding

Begin to establish priorities.

Direct pressure, tourniquet, hemostatic agent, as needed.

LEVEL OF CONSCIOUSNESS

Alert/responsive to voice

Unresponsive to voice

Initiate cervical-spine motion restriction, *if indicated by dangerous mechanism of injury.*

Establish cervical-spine motion restriction.

AIRWAY

Snoring

Gurgling

Stridor

You must fix any airway problems when you find them.

Modified jaw thrust.

Suction

Intubate, confirm tube placement, and apply waveform capnography, if available.

Silence	<p>Attempt to ventilate. If unsuccessful:</p> <ul style="list-style-type: none"> - Reposition; initiate rapid extrication. - Visualize. - Suction. - Consider foreign body removal or decompression of tension pneumothorax. - Initiate bag-mask ventilation, and consider BIAD or intubation, confirm tube placement, and apply waveform capnography, if available. - Consider translaryngeal jet ventilation or cricothyroidotomy.
BREATHING	<i>If ventilation is inadequate, assist ventilations.</i>
Absent	Ventilate twice (check pulse before continuing ventilation at 8 – 10 breaths per minute with oxygen).
<8	Assist ventilation at 8 – 10 breaths per minute with oxygen.
Low tidal volume	Assist ventilation at 8 – 10 breaths per minute with oxygen.
Labored	Oxygen by nonrebreather at 15 liters/minute.
Normal or rapid	Consider oxygen.
CIRCULATION	
RADIAL PULSE	
Absent	Check carotid pulse (see below). Note late shock.
Present	Note rate and quality.
Bradycardia	Consider spinal shock, head injury.
Tachycardia	Consider hypovolemic shock.
	Consider need for pain management.
	Consider cardiac monitor.
CAROTID PULSE	Check, if no radial pulse.
Absent	Initiate CPR and ventilation with oxygen, consider immediate intervention, transport, or terminate resuscitation.
Present	Note rate and quality.
Bradycardia	Consider spinal shock, head injury.
Tachycardia	Consider late shock.
SKIN COLOR AND CONDITION	
Pale, cool, clammy	Consider hypovolemic shock.
Cyanosis	Reassess ventilatory assistance and consider intubation.
MAJOR BLEEDING	Direct pressure, tourniquet, and/or hemostatic agent.
HEAD	
Major facial injuries	Consider intubation.

NECK	
Swelling, bruising, retracting	Consider intubation.
Neck vein distention	Consider tamponade, tension pneumothorax.
Tracheal deviation	Consider tension pneumothorax.
Tenderness, deformity, or altered mental status	Apply cervical collar.
CHEST	
Symmetrical, stable	Inspect and palpate.
Bruises, crepitation	Continue exam.
Penetrating wounds	Consider early cardiac monitoring.
Paradoxical motion	Occlusive dressing.
	Stabilize flail. Consider early intubation.
BREATH SOUNDS	
Present and equal	Continue exam.
Unequal	Percuss chest to determine pneumothorax versus hemothorax.
	<i>If indicated, initiate needle decompression.</i>
HEART TONES	
Muffled with JVD and bilateral breath sounds	Note for comparison later.
	Consider pericardial tamponade.
ABDOMEN, PELVIS, UPPER LEGS	
If tender abdomen, unstable pelvis, or bilateral femur fractures	Anticipate development of shock.
MOVEMENT/SENSATION IN EXTREMITIES	
Present	Record.
Decreased or absent	Suspect spine injury.
POSTERIOR	
Injuries identified.	Appropriately manage identified injuries.
	Transfer to backboard.
	TRANSPORT IMMEDIATELY IF CRITICAL TRAUMA SITUATION
SAMPLE HISTORY	
VITAL SIGNS	
	Obtain and record.
	Measure and record level of consciousness, respirations, pulse, blood pressure, pulse oximetry, core temperature, and level of discomfort.
Systolic < 90 with signs of shock	Consider IV fluid therapy en route to hospital.
Systolic < 80	IV fluid therapy en route to hospital
Systolic < 60	<i>Treat decompensated shock. Consider CPR.</i>
Increasing systolic blood pressure and decreasing heart rate	Consider increased intracerebral pressure. Maintain systolic blood pressure of 110–120 mm Hg. Consider adjustment of ventilations to maintain an ET _{CO} ₂ of 30–35 mmHg.

PUPILS

Unequal	Suspect head injury unless patient is alert, then suspect eye injury.
Unequal or dilated and fixed with GCS < 8	Give 100% oxygen. Do not let patient get hypotensive (target systolic BP of 110–120 mm Hg). Intubation and control ventilation (16–20 breaths per minute or at rate to maintain ET _{CO} ₂ of 30–35 mm Hg). (Unequal pupils or dilated and fixed pupils and GSC 8 or less are suggestive of cerebral herniation.)
Pinpoint (with respiratory rate < 8)	Consider naloxone.
Dilated/reactive (with GCS < 8)	Give 100% oxygen. Consider intubation. Ventilate at 6–8 breaths per minute or to maintain ET _{CO} ₂ of 35–45.
GLASGOW COMA SCALE SCORE (for decreased LOC)	Give 100% oxygen. Do not let patient get hypotensive (target systolic BP of 110–120 mm Hg).
< 8	Maintain ET _{CO} ₂ of 30–35 mm Hg. Consider hyperventilation only if patient shows signs of cerebral herniation: <ul style="list-style-type: none">– GCS < 8 with extensor posturing– GCS < 8 with pupillary asymmetry or nonreactivity– GCS < 8 with a subsequent drop of more than two points

ALL PATIENTS WITH DECREASED LOC

Check for medical information devices. Obtain blood glucose level.

• **ITLS Primary Survey – Critical Information**

Directions to students:

If you ask the right questions, you will get the information you need to make the critical decisions necessary in the management of your patient. The following questions are presented in the order in which you should ask yourself as you perform the ITLS Primary Survey. This is the minimum information that you will need as you perform each step of the ITLS Primary Survey (Figure 3-1 in the student manual):

Scene Size-up

- Have I taken standard precautions?
- Do I see, hear, smell, or sense anything dangerous?
- Are there any other patients?
- Are additional personnel or resources needed?
- Do we need special equipment?
- What is the mechanism of injury?
- Is it generalized or focused?
- Is it potentially life threatening?

Initial Assessment

General Impression

- What is my general impression of the patient as I approach?
- Is there obvious life-threatening *external* bleeding that must be addressed now?

Level of Consciousness (AVPU)

- Introduce yourself, and say: “We are here to help you. Can you tell us what happened?”
- From the patient’s response, what is the AVPU (alert, voice, pain, unresponsive) rating?

Airway

- Is the airway open and clear?
- Do I *hear* abnormal sounds such as snoring, gurgling, or stridor?

Breathing

- Is the patient breathing?
- What is the rate and depth of respiration?
- Is breathing labored?

Circulation

- Is there life-threatening external bleeding?
- What is the rate and quality of the pulse at the neck and wrist?
- What are the skin color, condition, and temperature?

Decision

- Is this a critical situation?
- Is spinal motion restriction indicated?
- Does the mechanism of injury or any initial assessment findings indicate the need for a rapid trauma survey?

Rapid Trauma Survey

(See Figure 3-2 in the student manual)

Head and Neck

- Are there obvious wounds of the head or neck?
- Is there deformity or tenderness of the neck?
- Are the neck veins distended?
- Does the trachea look and feel midline or deviated?

Chest

- Is the chest symmetrical?
- If not, is there paradoxical movement?
- Is there any obvious blunt or penetrating trauma?
- Are there any sucking (open) wounds?

- Is there tenderness, instability or crepitation (TIC) of the *chest wall*?
- Are the breath sounds present and equal?
- If breath sounds are not equal, is the chest hyperresonant (pneumothorax) or dull (hemothorax) to percussion?
- Are heart sounds normal or abnormal (distant, muffled)?

Abdomen

- Are there obvious injuries or discoloration?
- Is the abdomen tender, rigid, or distended?

Pelvis

- Are there obvious wounds or deformity?
- Is there TIC?

Upper Legs

- Are there obvious wounds, swelling, or deformity?
- Is there TIC?

Lower Legs and Arms

- Are there obvious wounds, swelling, or deformity?
- Is there TIC?
- Can the patient feel/move fingers and toes?

Posterior

- This exam is performed during transfer to the backboard for *SMR or removal from backboard after movement of patient*.
- Are there any wounds, tenderness, or deformity of the patient's posterior side?
- Is there a critical situation?
- Should I move the patient to the ambulance now?
- Are there interventions that I must delegate or perform now?

History

- What is the SAMPLE history (if not already obtained)?
- Ascertain PQRST, if not done: provocation/palliation, quality, radiation, severity, and time.

Baseline Vital Signs

- Are the vital signs abnormal?
- What are the mental status, respirations, pulse, blood pressure, pulse oximetry, core temperature, and level of discomfort?

Disability

Perform this exam now if there is altered mental status. Otherwise, postpone this exam until you perform the ITLS Secondary Survey. If the patient has an altered mental status, your questions are the following:

- Are the pupils equal and reactive?
- What is the Glasgow Coma Scale score?
- Are there signs of cerebral herniation (unresponsive, dilated pupil(s), hypertension, bradycardia, posturing)?
- Does the patient have a medical identification device?
- What is the finger-stick glucose test result?

- **ITLS Ongoing Exam**

Directions to students:

During the ITLS class, short written scenarios will be used along with a model to simulate the patient. You will divide into teams to practice performing the ITLS Ongoing (reassessment) Exam, making critical decisions and interventions. Each member of the team must practice being team leader at least once. The critical information represents the answers you should be seeking at each step of the exam.

Subjective Changes

- Ask the patient if they are feeling better or worse now.

Mental Status

- What is the level of consciousness (LOC)?
- What is pupillary size? Are they equal? Do they react to light?
- If altered mental status, what is the finger-stick glucose (if not already done), and what is the Glasgow Coma Scale score now?

Reassess ABCs

- Record vital signs (mental status, respirations, pulse, blood pressure, pulse oximetry, core temperature, and level of discomfort).

Airway

- Is the airway open and clear?
- Is the sound of breathing abnormal (snoring, gurgling, stridor)?
- If there are burns of the face, are there signs of inhalation injury?

Breathing and Circulation

- What is the rate and depth of respiration?
- What is the rate and quality of the pulse?
- What is the blood pressure?
- What are the skin color, condition, and temperature (capillary refill in children)?
- Is any external bleeding controlled?

Neck

- Are the neck veins normal, flat, or distended?
- If distended, is the trachea midline or deviated?
- Is there increased swelling of the neck?

Chest

- Are the breath sounds present and equal?
- If breath sounds are unequal, is the chest hyperresonant or dull?
- Are heart sounds still normal, or have they become muffled?

Abdomen

If mechanism suggests possible abdominal injury:

- Is there any tenderness?
- Is there abdominal guarding, distention or rigidity?

Assessment of Identified Injuries Checking All Completed Interventions

- Is the endotracheal tube still in the correct position?
- Is the oxygen rate correct?
- Is the oxygen tubing connected?
- Are the IVs running at the correct rate?
- Does the IV bag contain the correct fluid?
- Is the open chest wound still sealed?
- Is the decompression needle still working?
- Are any of the wound dressings blood soaked?
- Are the splints in the correct position?
- Is the impaled object still stabilized?
- Is the pregnant patient tilted 20 to 30 degrees to the patient's left?
- Is the cardiac monitor attached and working?
- Is the pulse oximeter attached and working?
- Is the capnograph attached and working?

• ***ITLS Secondary Survey***

Directions to students:

During the ITLS class, short written scenarios will be used along with a model to simulate the patient. You will divide into teams to practice performing the ITLS Secondary Survey. Each member of the team must practice being team leader at least once. The critical information represents the answers you should be seeking at each step of the exam.

SAMPLE History

Complete the SAMPLE history now if you have not already done so.

- What is the patient's history?

Vital Signs and Repeat Initial Assessment

General Impression

- Does the patient appear better, worse, or unchanged?

Airway

- Is the airway open and clear?
- Is the sound of breathing abnormal (snoring, gurgling, stridor)?

Breathing

- What is the rate and depth of respiration?
- Is the breathing labored?

Circulation

- What is the pulse rate and blood pressure?
- What are the skin color, condition, and temperature (capillary refill in children)?
- Is all external bleeding still controlled?

Neurologic Exam

- What is the level of consciousness (LOC)?
- If altered mental status, what is the blood glucose (if not already done)?
- Are the pupils equal? Do they respond to light?
- Can the patient move the fingers and toes?
- Can the patient feel me touch the fingers and toes?
- What is the Glasgow Coma Scale score (if altered mental status)?

Detailed Exam

Head

- Are there deformities, contusions, abrasions, penetrations, burns, lacerations, and swelling (DCAP-BLS) or TIC of the face or head?
- Are Battle's sign or raccoon eyes present?
- Is there blood or fluid draining from the ears or nose?
- Is there pallor, cyanosis, or diaphoresis?

Neck

- Is there DCAP-BLS or TIC of the neck?
- Are the neck veins normal, flat, or distended?
- Is the trachea midline or deviated?

Chest

- Is there DCAP-BLS of the chest?
- Is there any TIC of the ribs?
- Are there any open wounds or paradoxical movement?
- Are the breath sounds present and equal?
- Are there abnormal breath sounds?
- If breath sounds are not equal, is the chest hyperresonant or dull?
- Are heart sounds normal or decreased?
- If patient is intubated, is the endotracheal tube still in good position?

Abdomen

- Is there DCAP-BLS of the abdomen?
- Is the abdomen tender, rigid, or distended?

Pelvis

If the pelvis has already been examined during the ITLS Primary Survey, no further exam should be done.

Lower Extremities

- Is there DCAP-BLS or TIC of the legs?
- Are there normal distal pulses, motor function, and sensation (PMS)?
- Is range of motion normal? (optional as appropriate)

Upper Extremities

- Is there DCAP-BLS of the arms?
- Is there normal PMS?
- Is range of motion normal? (optional as appropriate)

- ***Patient Assessment and Management***

Directions to students:

Short written trauma scenarios will be used along with a model to simulate the patient. You will be divided into teams to practice the management of simulated trauma situations using the principles and techniques taught in the course. You will be evaluated in the same manner on the second day of the course. You will be expected to use all the principles and techniques taught in this course while managing these simulated patients. To familiarize yourself with the evaluation procedure, you will be given a copy of a scenario and a grade sheet. Review Chapter 2 in the student manual and the previous surveys in this chapter.

AIRWAY SKILLS: SKILL STATION 2

STUDENT MANUAL – CHAPTER 5

Before beginning, review “Skill Stations” (Chapter 3 in instructor guide).

Minimum instructors needed: 1.

Recommended time for this station is 30 minutes.

See Chapter 5 of the student manual for photos and diagrams.

Equipment List

<i>Item</i>	<i>Quantity</i>
Exam gloves (non-latex, multiple sizes)	1 box each
Goggles/face shield	2
Advanced airway mannequin - adult	2
Advanced airway mannequin - pediatric	2
Mannequin head/shoulder elevation (e.g. towel)	2
Airway lubricant	1
Portable suction machine with flush and charger	2
Manual suction device (optional)	2
Tonsil tip	2
Suction tubes (14–18 Fr.)	2
Tongue blades	10
Oropharyngeal airways (Adult and Ped sets)	2
Nasopharyngeal airways (Adult and Ped sets)	2
Adult bag-valve device/reservoir	2
Pediatric bag-valve device/reservoir	2
Adult face mask (#4–5)	2
Pediatric face mask (#1–3)	2
Oxygen cylinder with regulator	2
Stand for oxygen cylinder	2
Oxygen tubing	2
Nasal cannula	2
Nonrebreather mask	2
Pulse oximeter	2

Stethoscope	2 ea.
Endotracheal tubes (7–9)	2
Endotracheal tube (3.5 Fr.)	2 ea.
Stylet (adult, pediatric)	1
Lighted stylet (optional)	2
10-cc syringe	2
Blind insertion airway device (BIAD)	2
Laryngoscope	2
Spare batteries	4 ea.
Curved blades (#3–4)	2 ea.
Straight blades (#1–4)	2 ea.
Spare bulbs	1 ea.
Waveform end-tidal CO ₂ monitor	2
Commercial tube securing device	2
Colorimetric CO ₂ detector (optional)	2
Esophageal detection device (optional)	2

Objectives

At the conclusion of this station, the student will be able to:

1. Suction the airway.
2. Insert a nasopharyngeal and oropharyngeal airway.
3. Use the pocket mask.
4. Use the bag-valve mask.
5. Use the pulse oximeter.
6. Perform airway management utilizing supraglottic airway devices.
7. Prepare for endotracheal intubation.
8. Perform laryngoscopic orotracheal intubation.
9. Perform nasotracheal intubation.
10. Confirm placement of the endotracheal tube (ETT).
11. Use capnography to confirm placement of the ETT.
12. Secure the ETT.
13. Understand the use of medications to assist with intubation.

BASIC AIRWAY MANAGEMENT

Procedures

- ***Suctioning the Airway***

1. Attach the suction connecting tubing to the suction machine.
2. Turn the device on and test it.

3. Insert the suction tip through the nose (soft or whistle tip catheter) or mouth (soft or rigid) without activating the suction.
4. Open the patient's mouth, if needed, using a tongue blade. If using the scissors method, be aware that patients can still bite down as a reflex.
5. Activate the suction, and withdraw the suction tube.
6. Repeat the procedure as necessary.

Note that although the intent is to suction foreign matter, air and oxygen also are being suctioned out of the patient. Never suction for greater than 15 seconds. After suctioning, reoxygenate the patient as soon as possible.

- ***Inserting the Nasopharyngeal Airway (NPA)***

The nasopharyngeal airway (NPA) is made to go into the right nostril. Consider using an alternative to the NPA if the patient has facial fractures or raccoon eyes. To insert the NPA into the patient's right nostril follow these steps:

1. Choose the appropriate size. It should be as large as possible but still fit easily through the patient's external nares. The size of the patient's little finger can be used as a rough guide.
2. Measure the NPA from the nare to the tip of the ear lobe to ensure it is the correct length.
3. Lubricate the tube with a water-based lubricant.
4. Insert the tube straight back through the right nostril along the floor of the nose with the beveled edge of the airway toward the septum.
5. Gently pass it into the posterior pharynx with a slight rotating motion until the flange rests against the nares.

Note that if resistance to passage of the NPA is felt, DO NOT FORCE the NPA in, as injury may occur. Remove NPA and attempt insertion in the other nostril.

To insert the NPA into the left nostril:

1. Turn the airway upside down so that the bevel is toward the septum.
2. Insert straight back through the nostril until you reach the posterior pharynx.
3. Turn the airway over 180 degrees and insert it down the pharynx.

Note that if the tongue is occluding the airway, a jaw thrust or chin lift must be performed to allow the nasopharyngeal airway to go under the tongue.

- ***Inserting the Oropharyngeal Airway (OPA)***

1. Choose the size oropharyngeal airway (OPA) that is appropriate for the patient. The distance from the corner of the mouth to the lower part of the external ear or to the angle of the jaw is a good estimate.
2. In the unresponsive patient, open the patient's mouth with a scissor maneuver, a jaw lift or a tongue blade. If you are placing your fingers in the patient's mouth, use caution because broken teeth and biting can cause injury.
3. Insert the airway gently without pushing the tongue back into the pharynx.

- a. Insert the airway under direct vision, using a tongue blade. This is the preferred method and is safe for adults and children.
 - b. Insert the airway upside down or sideways and rotate into place after tip of airway passes the tongue. This method should *not* be used for children.
 4. If the OPA causes gagging, remove it and replace it with an NPA. The presence of a gag reflex is a contraindication to use of an OPA.
- **Using a Pocket Mask with Supplemental Oxygen**
 1. Stabilize the patient's head in a neutral position.
 2. Connect the oxygen tubing to the oxygen cylinder and the mask.
 3. Open the oxygen cylinder, and set the flow rate to a minimum of 15 liters per minute.
 4. Open the patient's mouth.
 5. Insert an OPA or NPA, if available. Otherwise use the chin-lift or jaw-thrust maneuver to open the airway.
 6. Place the mask on the face, and establish a good seal. Make sure the mask is the proper size for your patient. The mask should cover the nose and mouth and make a good seal. Facial hair, lack of teeth, obesity, or advanced age may make it difficult to get a good mask seal.
 7. Ventilate mouth-to-mask with enough volume (8–10 mL per kg body weight) *to cause adequate chest rise*. Ventilate at a rate of 8 to 10 breaths per minute. The inspiratory phase should last 1.5 to 2 seconds. Let the patient exhale before giving the next breath.
 - **Using the Bag-Valve Mask**
 1. Stabilize the patient's head in a neutral position.
 2. Connect the oxygen, connecting tubing to the bag-valve-mask system and oxygen cylinder.
 3. Attach the oxygen reservoir to the bag-valve mask.
 4. Open the oxygen cylinder, and set the flow rate to minimum of 15 liters per minute.
 5. Select the proper size mask, and attach it to the bag-valve-mask device. The mask should go from the bridge of the nose to the chin.
 6. Open the patient's mouth.
 7. Insert an OPA (or an NPA, if the patient has a gag reflex).
 8. If available, apply a capnography cannula or attach an airway adapter between the bag and the mask.
 9. Place the mask on the patient's face, and have your partner establish and maintain a good seal. Facial hair, lack of teeth, obesity, or advanced age might make it difficult to get a good mask seal.
 10. Using both hands, ventilate at a rate of 8 to 10 breaths per minute. If you are getting good bilateral chest rise, you are giving adequate tidal volume. Calculated tidal volume is 8-10 mL per kg body weight.
 11. Use capnography to ensure adequate ventilation and prevent inadvertent hyperventilation. As a general rule, keep the end-tidal CO₂ (ETCO₂) between 35 and 45 mm Hg.
 12. If you are forced to ventilate without the assistance of another emergency care provider, use one hand to maintain a face seal and the other hand to squeeze the bag. This may decrease the volume of ventilation because less volume is produced by only one hand squeezing the bag.

13. Watch for chest rise to ensure adequate ventilation volume. To make a proper seal, place the thumb on the mask over the nose and index finger on the mask over the chin while the rest of the fingers are in contact with the mandible.

- ***Inserting the King LT-D™ Airway***

1. Select the correct size King LT-D airway™:
 - a. Size 2 (green connector color) is for children 35 to 45 inches (90 to 115 cm) in height or who weigh 12 to 25 kg.
 - b. Size 2.5 (orange connector color) is for children 41 to 51 inches (105 to 130 cm) in height or who weigh 25 to 35 kg.
 - c. Size 3 (yellow connector color) is for adults 4 to 5 feet (122 to 155 cm) in height.
 - d. Size 4 (red connector color) is for adults 5 to 6 feet (155 to 180 cm) in height.
 - e. Size 5 (purple connector color) is for adults greater than 6 feet (>180 cm) in height.
2. Test the cuff inflation system for air leaks.
3. Apply a water-soluble lubricant to the distal tip.
4. Hold the airway at the connector with your dominant hand. With the neck stabilized in a neutral position, hold the mouth open, and apply a chin lift with your nondominant hand. Using a lateral approach, introduce the tip into the mouth.
5. Advance the tip behind the base of the tongue while rotating the tube back to the midline so that the blue orientation line faces the chin of the patient.
6. Without exerting excessive force, advance the tube until the base of the connector is aligned with the patient's teeth or gums.
7. Hold the KLT 900™ cuff pressure gauge in the non-dominant hand, and inflate the cuffs of the King LT-D™ with air to a pressure of 60 cm H₂O. If a cuff pressure gauge is not available and a syringe is being used to inflate the King LT-D™, inflate cuffs with the minimum volume necessary to seal the airway at the peak ventilatory pressure employed (just seal volume). Typical sizing and inflation volumes are as follows:
 - a. Size 2 (green), 35 to 45 inches (90 to 115 cm), 25 to 35 mL.
 - b. Size 3 (orange), 41 to 51 inches (105 to 130 cm), 30 to 40 mL.
 - c. Size 3 (yellow), 4 to 5 feet (122 to 155 cm), 45 to 60 mL.
 - d. Size 4 (red), 5 to 6 feet (155 to 180 cm), 60 to 80 mL.
 - e. Size 5 (purple), greater than 6 feet (> 180 cm), 70 to 90 mL.
8. Attach the resuscitator bag to the airway. While bagging the patient, gently withdraw the tube until ventilation becomes easy and free flowing (Figure 5-15 in the student manual). Adjust cuff inflation if necessary to obtain a seal of the airway at the peak ventilatory pressure employed. You must see the chest rise, hear breath sounds, feel good compliance, and hear no breath sounds over the epigastrium to be sure that the King LT-D™ airway is correctly placed. However, capnography remains the most reliable way to confirm and monitor the position of the tube. Like the other BIADs, if the patient becomes conscious, you must remove the airway. Extubation is likely to cause vomiting, so be prepared to suction the pharynx and turn the backboard.

- ***Inserting the Esophageal Tracheal Combitube™***

1. With the neck stabilized in a neutral position, insert the tube blindly, watching for the two black rings on the Combitube™ that are used for measuring the depth of insertion. The rings should be positioned between the teeth and the lips.
2. Use the larger syringe to inflate the pharyngeal cuff with the appropriate amount of air for the size being utilized. *Do not* hold the Combitube™ while inflating the pharyngeal balloon. As inflation occurs, the Combitube™ will seal itself in the posterior pharynx behind the hard palate.
3. Use the smaller syringe to fill the distal cuff with the appropriate amount of air for the size being utilized.
4. Initial ventilation is attempted through port #1. You must see the chest rise, hear breath sounds, feel good compliance, and hear no breath sounds over the epigastrium to be sure that you are ventilating the lungs.
5. If you do not see the chest rise, hear breath sounds, and feel good compliance, and if you hear breath sounds over the epigastrium, the tube has been placed in the trachea. In this case, change ventilation to the second port. Again, you must check to see the chest rise, hear breath sounds, feel good compliance, and hear no breath sounds over the epigastrium to be sure that you are ventilating the lungs. Use capnography to confirm and monitor correct placement. Like the other BIADs, if the patient becomes conscious, you must remove the Combitube™. Extubation is likely to cause vomiting, so be prepared to suction the pharynx upon removal.

- ***Inserting the Laryngeal Mask Airway (LMA™)***

Scan 5-1 in the student manual illustrates this procedure.

1. With the neck stabilized in a neutral position, ventilate with a mouth-to-mask or bag-valve mask technique. Suction the pharynx before insertion of the airway.
2. Remove the valve tab and check the integrity of the LMA™ cuff by inflating with the maximum volume of air.
3. Using the syringe included with the LMA™, the cuff of the LMA™ should be tightly deflated, so that it forms a flat oval disk with the rim facing away from the aperture. This can be accomplished by pressing the mask with its hollow side down on a sterile flat surface. Use the fingers to guide the cuff into an oval shape and attempt to eliminate any wrinkles on the distal edge of the cuff. A completely flat and smooth leading edge facilitates insertion, avoids contact with the epiglottis, and is important to ensure success when positioning the device.
4. Lubricate the posterior surface of the LMA™ with a water-soluble lubricant just before insertion.
5. Preoxygenate (do not hyperventilate) the patient.
6. If there is no danger of spine injury, position the patient with the neck flexed and the head extended. If the mechanism of injury suggests the potential for spine injury, the patient's head and neck must be maintained in a neutral position.
7. Hold the LMA™ like a pen, with the index finger placed at the junction of the cuff and the tube. Under direct vision, press the tip of the cuff upward against the hard palate and flatten the cuff against it. The black line on the airway tube should be oriented anteriorly toward the upper lip.

8. Use the index finger to guide the LMA™, pressing upward and backward toward the ears in one smooth movement. Advance the LMA™ into the hypopharynx until definite resistance is felt.
9. Before removing the index finger, gently press down on the tube with the other hand to prevent the LMA™ from being pulled out of place.
10. Without holding the tube, inflate the cuff with just enough air to obtain a seal. The maximum volumes are shown in Table 5-1. When inflating, the LMA™ may move slightly as it seats. Holding the tube will prevent this movement and not allow a seal over the glottic opening.
11. Connect the LMA™ to the bag-valve mask and employ manual ventilation of less than 20 cm H₂O. (This precludes use of an FROPVD, unless you use one that allows you to set the pressure.) As with the supraglottic airways (BIADs), you must see the chest rise, hear breath sounds, feel good compliance, and hear no breath sounds over the epigastrium to be sure that the LMA™ is correctly placed. However, this confirmation method can be unreliable, so use of capnography to confirm and monitor tube position is recommended.
12. Insert a bite block (not an oropharyngeal airway), and secure the LMA™ with tape or a commercial tube holder. Remember that the LMA™ does not protect the airway from aspiration. If the patient becomes conscious, the LMA™ must be removed. Extubation is likely to cause vomiting, so be prepared to suction the pharynx and turn the backboard.

ADVANCED AIRWAY MANAGEMENT

Procedures

- ***Laryngoscopic Orotracheal Intubation***

Intubation in the trauma patient differs from the usual endotracheal intubation in that the patient's neck must be stabilized in the neutral position during the procedure. This does make it more difficult to visualize the vocal cords during laryngoscopy. After ventilation and initial preparations, the following steps should be carried out:

1. An assistant stabilizes the head and neck, and counts slowly aloud to 30 (at your request).
2. In the supine patient, lift the chin, and slide the blade into the right side of the patient's mouth. Push the tongue to the left, and "inch" the blade down along the tongue in an attempt to see the epiglottis. A key maneuver must be performed here: The blade must pull forward (up) on the tongue to lift up the epiglottis and bring it into view.
3. Use the laryngoscope blade to lift the tongue and epiglottis up and forward in a straight line. "Levering" the blade is an error and can result in broken teeth and other trauma. The laryngoscope is essentially a "hook" to lift the tongue and epiglottis up and out of the way so that the glottic opening can be identified. Remember that the Miller (straight) blade is used to lift the epiglottis directly, whereas the Macintosh (curved) blade is inserted into the vallecula and lifts the epiglottis indirectly.
4. Advance the tube along the right side of the oropharynx once the epiglottis is seen. When the glottis opening (or even just the arytenoid cartilages) is identified, pass the tube through to a depth of about 5 cm beyond the cords. The mark on the tube that is even with the teeth

should be three times the diameter of the ET tube. Thus, an 8.0 mm tube in an adult should be at 24 cm.

5. While the tube is still held firmly, remove the stylet, inflate the cuff, attach a bag-valve mask, and check the tube for placement using the immediate confirmation protocol given in the paragraphs that follow.
6. Begin ventilation using adequate oxygen concentration and tidal volume. Maintain an ETCO₂ level between 35 and 45 mmHg.

- ***Nasotracheal Intubation***

1. Perform routine preparation procedures.
2. Lubricate the cuff and distal end of a 7 mm or 7.5 mm ETT. With the bevel against the floor or septum of the nasal cavity, slip the tube distally through the largest naris. Insert along the floor of the nasal cavity at a 90-degree angle to the face.
3. When the tube tip reaches the posterior pharyngeal wall, take great care on “rounding the bend,” and then direct the tube toward the glottic opening.
4. By watching the neck at the laryngeal prominence, you can judge the approximate placement of the tube. Tenting of the skin on either side of the prominence indicates that the tube is caught up in the pyriform fossa, a problem solved by slight withdrawal and rotation of the tube to the midline. Bulging and anterior displacement of the laryngeal prominence usually indicate that the tube has entered the glottic opening and has been correctly placed. At this point the patient, especially if not deeply comatose, will cough, strain, or both. This may be alarming to the novice emergency care provider, who might interpret this as laryngospasm or misplacement of the tube. The temptation may be to pull the tube and ventilate because the patient may not breathe immediately. Holding your hand or ear over the opening of the tube to detect airflow may reassure you that the tube is correctly placed, and you may inflate the cuff and begin ventilation.
5. Confirm tube placement using the immediate confirmation protocol listed in the following section.

- ***Face-to-Face Intubation***

On occasion the location of the victim may prevent access to his head to allow for intubation from the conventional position. A face-to-face approach (also called the tomahawk method) has been described and used successfully.

Using this method, the emergency care provider faces the patient and usually utilizes the Macintosh (curved) laryngoscope blade. An assistant maintains a neutral position of the cervical spine, if possible. The emergency care provider holds the laryngoscope in his hand with the blade end of the handle emerging from the thumb side of the fist, so that the blade can “hook” the tongue.

Preparation of equipment is as previously mentioned, including having mechanical suction immediately available. Entering from the right side of the mouth, the tongue is swept to the left of the mouth, and the jaw and tongue are pulled toward the emergency care provider, allowing for visualization of the larynx and insertion of the ET tube. This technique is very effective with patients in a seated position, such as one trapped in a motor vehicle. It also can be used with

morbidly obese patients on whom the emergency care provider is not able to generate sufficient leverage to move the jaw forward.

- **Confirmation of Tube Placement**

1. Auscultate three sites.
 - a. Epigastrium—the most important—should be silent, with no sounds heard.
 - b. Right and left midaxillary lines to confirm equal breath sounds and to ensure tube is not in right mainstem bronchi.
2. Inspect for full movement of the chest with ventilation.
3. Check position using one of the CO₂ detecting devices or a suction bulb or syringe AKA esophageal detector device (EDD).
4. Watch for any change in the pulse oximeter reading or in the patient's skin color. Also observe the ECG monitor for changes.

- **Reconfirming ET Tube Position**

1. Auscultate the sites shown in manual.
 - a. Epigastrium—should be silent with no sounds heard.
 - b. Right and left midaxillary lines.
 - c. Right and left apex.
 - d. Sternal notch—"tracheal" sounds should be readily heard here.
2. Inspect the chest for full movement of the chest with ventilation.
3. Use adjuncts such as CO₂ detectors (or a suction bulb, if part of local protocol) to help confirm placement.

Any time placement is still in doubt despite the preceding protocol, visualize directly or remove the tube. Never assume that the tube is in the right place. Always be sure, and record that the protocol has been carefully followed.

- **Confirming and Monitoring ET Tube Placement with Capnography**

1. Prepare all equipment for intubation. Turn on the monitor, and attach the capnography filter line or wires to it. (This will vary depending on the brand of capnograph.) It is advisable to apply and record baseline capnography during preoxygenation prior to an intubation attempt to prevent inadvertent hyperventilation.
2. Place the ETT, and inflate the cuff. In cases of arrest, compressions should *not* be interrupted to perform this procedure.
3. Attach the capnography airway adapter on the ETT, and then attach the bag-valve mask to the airway adapter.
4. Ventilate the patient, and observe the waveform. The presence of a "square" pattern confirms tracheal placement. Print out the waveform, if possible (for documentation). If the waveform is nonexistent or appears in gross and irregular waveform patterns, the tube is possibly in the esophagus or hypopharynx. In pediatrics, small tube size may limit CO₂ readings because some air may go around the tube and, thus, is not detectable by the capnogram. Use a cuffed tube in those cases, and the waveform and CO₂ readings should improve.
5. Listen for breath sounds midaxillary on each side to rule out right mainstem intubation.

6. Secure the tube, and continually monitor the waveforms during transport. Carefully watch the ETCO_2 value to avoid inadvertent hypo- or hyperventilation.
7. On arrival at the receiving facility, print out another waveform (if available) to prove correct placement at the time of patient transfer.
8. On your run report, document the visualization of the vocal cords, attach the waveform printout(s) or document the presence, or upload the data to your electronic patient care record, if your EMS service uses such devices, and document equal breath sounds.

THORACIC TRAUMA SKILLS: SKILL STATION 3

STUDENT MANUAL – CHAPTER 7

Before beginning, review “Skill Stations” (Chapter 3 in instructor guide).

Minimum number of instructors needed: 1.

Recommended time for this station is 30 minutes.

Objectives

At the conclusion of this station, the student should be able to:

1. Explain the advantages, disadvantages, and complications of needle decompression of a tension pneumothorax by the anterior approach and the lateral approach.
2. Describe the indications for emergency decompression of a tension pneumothorax.
3. Perform needle decompression of a tension pneumothorax by either the anterior or lateral approach.

Equipment List

<i>Item</i>	<i>Quantity</i>
Exam gloves (non-latex, multiple sizes)	1 box each
Chest decompression mannequin (anterior/lateral approach)	2
One-way valve/chest seal	2
10-cc syringe	6
14-gauge over-the-needle catheters	18 ea.

Procedures

- ***Performing Decompression by the Anterior Approach***

1. Assess the patient to make sure that his or her condition is due to a tension pneumothorax. Signs of tension pneumothorax are the following:
 - a. Absent or decreased breath sounds on the affected side.
 - b. Decreased level of consciousness (LOC).
 - c. Respiratory distress; tachypnea.
 - d. Weak/thready pulses; possible absent radial pulse.
 - e. Skin cool, clammy, diaphoretic; pale or cyanotic.
 - f. Neck vein distention (may not be present if there is associated severe hemorrhage).
 - g. Possible tracheal deviation away from the side of the injury (late sign and often not present).
 - h. Decreased level of consciousness (LOC).
 - i. Tympanic sound (hyperresonance) to percussion on the affected side.
2. Give the patient high-flow oxygen and ventilator assistance.
3. Determine that indications for emergency decompression are present. Then, if required, obtain medical direction to perform the procedure.

4. *Anterior site for decompression:* Expose the side of the tension pneumothorax, and identify the second intercostal space on the anterior chest at the midclavicular line. This may be done by feeling for “angle of Louis,” the bump located on the sternum about a quarter of the way from the suprasternal notch (Figure 7-2 in the student manual). The insertion site should be slightly lateral to the midclavicular line (nipple line) to avoid cardiac or major vascular complications in the mediastinum.
5. Quickly prepare the area with an antiseptic.
6. Remove the plastic cover from a 14-gauge or larger catheter that is 6 to 9 cm long (8 French, 9 cm Turkel Safety Needle, 14-gauge, 8.25 cm ARS decompression needle, 8.5 French, 6 cm Cook pneumothorax needle, or 14 gauge, 8 cm angiocath). Insert the needle into the second intercostal space at a 90-degree angle to the superior border of the third rib to avoid the neurovascular bundle (Figure 7-3 in the student manual). Direction of the bevel of the needle is irrelevant to successful results. Be very careful not to angle the needle toward the mediastinum (medially). As the needle enters the pleural space, you may be able to feel a “pop.” If a tension pneumothorax is present, a hiss of air may be audible as the thoracic pressure is relieved. You will not hear this sound if you use a syringe as a handle for the needle or leave the end plug in place. When using an over-the-needle catheter, advance the catheter into the chest (Figure 7-4 in the student manual). Remove the needle, and leave the catheter in place. To avoid dislodgement the catheter hub may be stabilized to the chest with tape.
7. Place a one-way valve on or over the decompressing needle. The chest seal will go over the needle to provide a one-way valve and to protect the needle from accidentally being dislodged. Other one-way valves are available or can be made, but should be tested before using. (A needle through the finger of a rubber glove will not work as a one-way valve.) Younger, healthy patients will tolerate having no valve at all on the decompressing needle.
8. Leave the plastic catheter, and secure it in position until it is replaced by a chest tube at the hospital.
9. Some emergency care providers find it helpful to take a small syringe to which is added a few milliliters of saline and attach it to the needle hub before insertion. The syringe can be used as a handle during insertion. Drawing back on the syringe plunger as you advance, you will aspirate air when you reach the pleural cavity, which will be seen as air bubbles in the saline. Intubate the patient if indicated. Monitor closely for recurrence of the tension pneumothorax, and repeat decompression procedure if signs redevelop.

- ***Performing a Chest Decompression by the Lateral Approach***

1. Assess the patient to make sure that his or her condition is due to a tension pneumothorax. Signs of tension pneumothorax are the following:
 - a. Absent or decreased breath sounds on the affected side.
 - b. Decreased level of consciousness (LOC).
 - c. Respiratory distress; tachypnea.
 - d. Weak/thready pulses; possible absent radial pulse.
 - e. Skin cool, clammy, diaphoretic; pale or cyanotic.
 - f. Neck vein distention (may not be present if there is associated severe hemorrhage).
 - g. Possible tracheal deviation away from the side of the injury (late sign and often not present).

- h. Decreased level of consciousness (LOC).
 - i. Tympanic sound (hyperresonance) to percussion on the affected side.
2. Give the patient high-flow oxygen and ventilator assistance.
 3. Determine that indications for emergency decompression are present. Then, if required, obtain medical direction to perform the procedure.
 4. *Lateral site for decompression:* Expose the side of the tension pneumothorax, and identify the intersection of the nipple (fourth rib) and anterior axillary line on the same side as the pneumothorax.
 5. Quickly prepare the area with an antiseptic.
 6. Remove the plastic cap from a 14-gauge catheter needle that is at least 2 inches or 5 cm long, and insert the needle into the intercostal space at a 90-degree angle to the superior border of the fourth rib to avoid the neurovascular bundle. If the patient is muscular or obese, you may need to use a 6 to 9 cm catheter needle. Direction of the bevel is irrelevant to successful results. As the needle enters the pleural space, there will be a “pop.” If a tension pneumothorax is present, there will be a hiss of air as the pneumothorax is decompressed. When using an over-the-needle catheter, advance the catheter into the chest. Remove the needle, and leave the catheter in place. The catheter hub must be stabilized to the chest with tape.
 7. Place a one-way valve on or over the decompressing needle. The chest seal will go over the needle to provide a one-way valve and to protect the needle from accidentally being dislodged. Other one-way valves are available or can be made, but should be tested before using. (A needle through the finger of a rubber glove will not work as a one-way valve.) Young, healthy patients will tolerate having no valve at all on the decompressing needle.
 8. Leave the plastic catheter and secure it in position until it is replaced by a chest tube at the hospital.
 9. Some emergency care providers find it helpful to take a small syringe to which is added a few milliliters of saline and attach it to the needle hub before insertion. The syringe can be used as a handle during insertion. Drawing back on the syringe plunger as you advance, you will aspirate air when you reach the pleural cavity, which will be seen as air bubbles in the saline.
 10. Intubate the patient if indicated. Monitor with capnography when available. Monitor closely for recurrence of the tension pneumothorax, as an increase in the CO₂ is an early sign the catheter is kinked or a tension pneumothorax is reoccurring.

VASCULAR ACCESS SKILLS: SKILL STATION 4

STUDENT MANUAL – CHAPTER 9

Before beginning, review “Skill Stations” (Chapter 3 in instructor guide).

Minimum number of instructors: 1.

Recommended time for this station is 30 minutes.

Objectives

At the conclusion of this station, the student should be able to:

1. Perform the technique of cannulation of the external jugular vein.
2. Recite indications for the use of intraosseous infusion.
3. Perform intraosseous infusion using the EZ-IO® Drill for tibial and humeral sites.
4. Perform intraosseous infusion using FAST Responder™ device at sternal site.
5. Use length-based resuscitation tape to estimate the weight of a child.

Equipment List

<i>Item</i>	<i>Quantity</i>
EZ-IO® driver	2
EZ-IO® AD, EZ-IO® LD, or EZ-IO® PD needle set	2
Manual intraosseous needles	6
Antiseptic swab, such as alcohol or Betadine®	6
EZ-Connect® or standard extension set	
10 mL syringes	2
Normal saline (or suitable sterile fluid)	
Pressure bag or infusion pump	
2% lidocaine (or saline) for IV/IO use (preservative free, epinephrine free)	

Procedures

- ***Performing External Jugular Cannulation***

1. The patient must be in the supine position, preferably head down, to distend the vein and to prevent air embolism.
2. If no suspicion of cervical-spine injury exists, turn the patient’s head to the opposite side. If there is a danger of cervical-spine injury, one emergency care provider must stabilize the head (it must not be turned) while the IV is being started. The cervical collar should be opened or the front removed during the procedure.
3. Quickly prepare the skin with an antiseptic, and then align the cannula with the vein. The needle will be pointing toward the clavicle at the junction of the middle and medial thirds.

4. With one finger, press on the vein just above the clavicle. This should make the vein more prominent.
5. Insert the needle into the vein at about the midportion, and cannulate in the usual way.
6. If not already done, draw a 30 mL sample of blood and store it in the appropriate tubes (if the hospital will accept blood drawn in the field).
7. Connect the intravenous, and tape down the line securely. If there is danger of cervical-spine injury, a cervical collar can be applied over the IV site.

- ***Insertion of IO Needle by Use of the EZ-IO® System***

Determine the need for this procedure. Obtain permission from medical direction if required. If the patient is conscious, advise him of emergent need for this procedure and obtain informed consent. To perform the insertion:

1. Wear approved personal protective equipment (PPE).
2. Determine EZ-IO® AD, EZ-IO® AD, or EZ-IO® PD indications.
3. Rule out contraindications.
4. Locate an appropriate insertion site.
5. Prepare the insertion site, using aseptic technique, and then allow it to dry.
6. Prepare the EZ-IO® driver (power or manual) and the appropriate needle set:
 - a. EZ-IO® 15 mm for 3 to 39 kg (less than 16 pounds).
 - b. EZ-IO® 25 mm for 40 kg (more than 16 pounds) and greater.
 - c. EZ-IO® 45 mm for 40 kg and greater with excessive tissue.
7. Stabilize the site to prepare to insert the appropriate needle set.
8. Remove the needle cap. Insert the EZ-IO® needle into the selected site. (Keep your hand and fingers away from the needle.) Position the driver at the insertion site with the needle set at a 90-degree angle to the bone surface.
9. Gently pierce the skin with the needle until the needle touches the bone. The black line on the needle should be visible. Penetrate the bone cortex by squeezing the driver's trigger and applying gentle, consistent, steady downward pressure. (Allow the driver to do the work.) Do not use excessive force. In some patients, insertion may take 10 seconds. If the driver sounds like it is slowing down during insertion, reduce the pressure on the driver to allow the RPMs of the needle tip to do the work. If the battery fails, you may manually finish inserting the needle just as you would a manual IO needle.
10. Release the driver's trigger and stop the insertion process when a sudden "give" or "pop" is felt on entry into the medullary space or when desired depth is obtained.
11. Remove the EZ-IO® driver from the needle set while stabilizing the catheter hub.
12. Remove the stylet from the catheter by turning counterclockwise. Place the stylet in the shuttle or an approved sharps container.
13. Confirm placement. Connect the primed EZ-Connect®. Syringe bolus (flush) the EZ-IO® catheter with the appropriate amount of normal saline (10 mL for adults and 5 mL for children). Remember: no flush = no flow!
14. If the patient is responsive to pain or complains of pain when you flush the marrow cavity, slowly (in 0.2 mL increments), administer the appropriate dose of preservative-free (for IV/IO use) lidocaine 2% (20 mg/mL) IO to anesthetize the IO space. (IO infusion causes severe pain in alert patients.) Follow local protocols when administering medicine.

- a. 2–4 mL (20–40 mg) for adults.
 - b. 0.5 mg/kg (0.025 mL per kg) for children.
- Then wait 15 to 30 seconds for the lidocaine to take effect.
15. Begin the infusion. Utilize pressure—up to 300 mmHg (pressure bag or infusion pump)—for continuous infusion.
 16. Dress the site, secure the tubing, and apply the wristband (document time and date) as directed by local protocols.
 17. Monitor the EZ-IO® site and the patient's condition.

To remove the catheter, start by supporting the patient's leg. Simultaneously, connect a sterile Luer-Lok™ syringe to the hub of the catheter. Once connected, rotate the syringe and catheter clockwise while gently pulling. When the catheter has been removed, immediately place it in an appropriate biohazard container. Do not leave the EZ-IO® catheter in place for more than 24 hours.

- ***Performing Manual IO Infusion in a Child***

1. Determine the need for this procedure. Obtain permission from medical direction if required.
2. Have all the equipment needed ready prior to bone penetration:
 - a. 16-18 gauge IO needles.
 - b. 5 mL and 10 mL syringes.
 - c. Antiseptic solution to prep the skin.
 - d. IV tubing and IV fluids.
 - e. Tape and dressing material to secure the IO needle.
 - f. Blood pressure cuff or commercial pressure device to infuse fluid under pressure.
3. Identify the site, which is the proximal tibia, two finger breadths below the tibial tuberosity, either midline or slightly medial to the midline.
4. Prep the skin with an appropriate antiseptic (very important).
5. Obtain the proper needle. The needle must have a stylet so that it does not become plugged with bone. Although 13-, 18-, and 20-gauge spine needles will work, they are difficult and uncomfortable to grip during the insertion process. Long spine needles tend to bend easily, so if you use spine needles, try to obtain the short ones. The preferred needle is a 14–18 gauge IO needle, but bone marrow needles also can be used.
6. Using aseptic technique, insert the needle into the bone marrow cavity perpendicular to the skin (Figure 9-2 in the student manual). Advance it to the periosteum. Penetrate the bone with a slow boring or twisting motion until you feel a sudden “give” or “pop” (decrease in resistance) as the needle enters the marrow cavity. This can be confirmed by removing the stylet and aspirating blood and bone marrow. You may not be able to aspirate marrow; however, if the catheter flushes easily and without infiltration, it is okay to use.
7. Syringe bolus (flush) the IO catheter with 5 mL of normal saline. Remember: no flush = no flow!
8. If the child is responsive to pain or complains of pain when you flush, slowly (0.2 mL increments) administer a 0.5 mg/kg (0.025 mL per kg) dose of preservative-free (for IV/IO use) lidocaine 2% (20 mg/mL) IO to anesthetize the IO space. A 10-kg child would get 0.25

mL (5 mg of 2% lidocaine). Wait 15 to 30 seconds for the lidocaine to take effect. Assess for potential IO complications. Follow local protocols for medication administration.

9. Attach standard IV tubing, and infuse the fluid and/or medications. To obtain an adequate flow rate, you may have to infuse fluid under pressure. Use of a pressure infusion bag or securing an inflated blood pressure cuff around the IV bag will assist in maximizing the fluid infusion.
10. Tape the tubing to the skin and secure the bone marrow needles as if to secure an impaled object. (Use gauze pads taped around the insertion site.)

- ***Inserting the FAST Responder™ Intraosseous Device***

1. Expose the sternum, and locate the sternal notch.
2. Clean the insertion site with an antiseptic.
3. Remove the adhesive liner with the locking pin.
4. Position yourself. Stand/kneel at the head or the side of patient, or as you are comfortable.
5. Place the device. Align the target foot notch with the patient's sternal notch and the introducer (the device handle) perpendicular to the manubrium. Verify placement in the correct location.
6. Push the FAST Responder™ down perpendicular to the sternum completely to deploy the infusion tube.
7. Pause and pull back. Withdraw the FAST Responder™ device straight back while holding down the target foot. Support comes out with the infusion tube.
8. Discard the device following your contaminated sharps protocols.
9. Prepare. Connect the IV line directly to the Luer-Lok™, and clip the strain relief hook to the target foot.
10. Optional: According to local protocol, flush with fluid to clear line, and confirm placement by aspiration.
11. Optional: Remove the liner from the protective dome and apply the dome over the target foot infusion site.

Remember the six Ps: position yourself relative to the patient, place the device, push to deploy, pause (hold target foot), pull back the device, and prepare (connect fluid source).

Fluid flow rates are as follows: gravity, 30 to 80 mL/ minute; pressure infuser to 120 mL/minute; syringe, 150 to 250 mL/minute.

- ***Removing the FAST Responder™ Intraosseous Device***

1. Remove the protective dome from the target foot.
2. Turn off the source of fluid, and disconnect the IV line.
3. Grasp the infusion tube with your fingers or clamp and pull perpendicular to manubrium until the entire infusion tube emerges from the patient's chest. Using the tube to pull, pull in one continuous motion until the device is removed.
4. Peel off the target foot following your contaminated sharps protocol.

Precautions/warnings include all of the following: Trauma, infection, or burns at the insertion site may preclude use of the FAST device. Safety with very severe osteoporosis has not been proven. Use in patients who have had a recent sternotomy may prove less effective. The function of the device may be affected by fracture of the sternum or vascular injury, which may compromise the integrity of the manubrium or its vascularization.

- ***Estimating a Child's Weight with a Length-Based Resuscitation Tape***

1. Place the patient in the supine position.
2. Using the tape, measure the patient from the crown to the heel. The red end with an arrow goes at the child's head.
3. Note the box on the tape where the child's heel falls. With the SPARC system, match the color of the tape where the child's heel falls with the same colored area of the booklet.
4. If the measurement falls on a line, the box or colored panel proximal to the line is used to generate the fluid volume, drug doses, and sizes of equipment needed for resuscitation.
5. The tape may be disinfected if it becomes contaminated.

SPINE MANAGEMENT SKILLS: SKILL STATION 5

STUDENT MANUAL – CHAPTER 12

Before beginning, review “Skill Stations” (see Chapter 3 in instructor guide).

Minimum instructors needed: 1.

Recommended time for this station is 30 minutes.

Objectives

At the conclusion of this station, the student should be able to:

1. Describe the essential components of a spinal motion restriction (SMR) system.
2. Describe the goals and principles of SMR.
3. Explain when to use SMR.
4. Explain when to perform an Emergency Rescue and a rapid extrication.
5. Perform SMR with a short extrication device.
6. Log roll a patient onto a long backboard.
7. Properly secure a patient to a long backboard.
8. Transfer a patient using a scoop stretcher.
9. Stabilize a patient’s head and neck when a neutral position cannot be safely attained.
10. Perform a rapid extrication.
11. Explain when helmets should and should not be removed from injured patients.
12. Properly remove a motorcycle helmet.

Equipment List

<i>Item</i>	<i>Quantity</i>
Exam gloves (non-latex, multiple sizes)	1 box each
Live model (may utilize student)	1
Rigid cervical collar (assorted sizes or adjustable)	2 each size
Long backboard with four (4) nine foot straps	1
KED or similar vest-type extrication device	1
Head immobilization device	1
Padding	4
Tape	2 rolls
Elastic wraps (ACE) 6"	2
Chair or vehicle	1
Scoop stretcher or Reeves sleeve	1
Motorcycle helmet (full face)	1
Football helmet with face protector	1
Shoulder pads	1 set
Open face helmet	1

Procedures

- ***Patient Removal from Backboard***

1. Utilize the appropriate number of resources to ensure patient safety. Lock the stretcher in place, and position the backboard slightly to the left or right side of the stretcher.
2. Have a team member manage the head in a neutral position and unstrap the patient from the backboard.
3. Prepare the backboard by removing the straps or securing them under the backboard.
4. Log roll the patient off the backboard onto the stretcher. Inspect the patient's posterior surface as needed during transfer to the stretcher.
5. (A) Remove the backboard from under the patient and (B) roll the patient back onto the center of the stretcher.
6. (A) Reposition the patient as needed and (B) secure him or her to stretcher.
7. When limited resources exist, the use of a scoop stretcher may be the preferred method of transferring the patient to the stretcher.

- ***Cervical Collar Placement***

1. Establish manual stabilization by holding the head between the two hands of emergency care provider 1. Application of the semi rigid cervical collar is best accomplished when the patient is in a supine position. If necessary, emergency care provider 1 may attempt to reposition the head if the patient is unresponsive and not in a midline neutral position.
2. Emergency care provider 2 measures the patient to identify an appropriate size semi rigid collar. Although the angle of the mandible and the trapezius are the most common anatomical points for measuring the size of the collar needed, providers must refer to the individual manufacturer instructions for application.
3. Emergency care provider 2 applies the cervical collar and secures in place.

- ***Applying a Kendrick Extrication Device***

1. After a cervical collar has been applied, slip the KED behind the patient and center it.
2. Properly align the device. Then wrap the vest around the patient's torso.
3. When the device is tucked well up into the armpits, secure the chest straps.
4. Bring each leg strap around the ipsilateral (same side) leg and back to the buckle on the same side. Fasten snugly.
5. Secure the patient's head with the Velcro head straps. Apply padding as needed to maintain a neutral position.
6. Tie the hands together or secure arms and hands to side of patient with straps.
7. Turn the patient and device as a unit then lower the patient onto a long backboard. Loosen the leg straps, and allow the legs to extend out flat. Finally, secure the patient and device to the backboard.

- ***Rapid Extrication***
 1. Stabilize the neck and perform the initial assessment. Apply a semi rigid extrication collar.
 2. A second emergency care provider stands beside the open door of the vehicle and takes over control of the cervical spine. Slide the long backboard onto the seat and slightly under the patient. Carefully supporting the neck, torso, and legs, the emergency care providers turn the patient.
 3. Stabilize the cot under the board. Begin to lower the patient onto the board.
 4. The legs are lifted, and the back is lowered to the backboard. Carefully slide the patient to the full length of the backboard. The patient is immediately moved away from the vehicle and into the ambulance, if available. Secure the patient to the backboard as soon as possible.

- ***Log Rolling a Supine Patient onto a Long Backboard***
 1. Establish and maintain in-line manual stabilization while applying a semi rigid cervical collar.
 2. With the long board positioned beside the patient, emergency care providers 2, 3, and 4 assume their positions at the patient's side opposite the board, leaving space to roll the patient toward them.
 3. Emergency care provider 1 or emergency care provider 2 may direct the other team members to roll the patient as a unit onto the side toward the emergency care providers.
 4. After assessing the patient's posterior surface from occiput to heels, the emergency care provider at the waist reaches over, grasps the backboard, and pulls it into position against the patient. This also can be done by a fifth emergency care provider. Emergency care provider 1 or emergency care provider 2 instructs the emergency care providers to roll the patient onto the backboard.
 5. Position the patient midline on the backboard, and secure the patient's body to the board with straps. Manage the extremities and hands appropriately so as not to allow uncontrolled movement.
 6. Use a head/cervical immobilization device to secure the patient's head to the backboard after securing the body and extremities.
 7. Transfer the patient and the backboard as a unit to the stretcher and proceed to loading the patient into the ambulance.

- ***Log Rolling the Prone Patient with an Adequate Airway onto a Long Backboard***
 1. Emergency care provider 1 stabilizes the neck. When placing his hands on the patient's head and neck, the emergency care provider's thumbs always point toward the patient's face. This prevents having the emergency care provider's arms crossed when the patient is log rolled. An initial assessment and exam of the backside is done. Then a semi rigid extrication collar should be applied.
 2. The patient is placed with his legs extended in the normal manner and his arms (palms inward) extended by his sides. The patient will be rolled up on one arm, with that arm acting as a splint for the body.
 3. The long backboard is positioned next to the patient's body on the side of the first emergency care provider's lower hand. (If the first emergency care provider's lower hand is on the patient's right side, the backboard is placed on the patient's right side.) If the pa-

tient's arm next to the backboard is the one injured, carefully raise it above the patient's head so he does not roll on the injured arm.

4. Emergency care providers 2 and 3 kneel at the patient's side opposite the board.
5. Emergency care provider 2 is positioned at the mid-chest area. Emergency care provider 3 should be beside the patient's upper legs.
6. Emergency care provider 2 grasps the shoulder and the hip. Usually, it is possible to grasp the patient's clothing (if not too loose) to help with the roll.
7. Emergency care provider 3 grasps the hip (holding the near arm in place) and the lower legs (holding them together).
8. When everyone is ready, emergency care provider 1 or emergency care provider 2 gives the order to log roll the patient.
9. Emergency care providers 2 and 3 roll the patient away from them and onto his side. The patient's arms are kept locked to his side to maintain a splinting effect. The head, shoulders, and pelvis are kept in line during the roll.
10. The backboard is now positioned next to the patient and held at a 30- to 45-degree angle by emergency care provider 4. If there are only three emergency care providers, the board is pulled into place by emergency care provider 2 or 3. The board is left flat in this case.
11. When everyone is ready, emergency care provider at the head gives the order to roll the patient onto the backboard. This is accomplished by keeping the head, shoulders, and pelvis in line.
12. The ITLS Primary Survey should now be completed.

- ***Application of the Scoop Stretcher***

1. Placement of the head immobilization device and head restraint strap occurs following securing the patient to the scoop stretcher.
2. Separate the scoop stretcher into two halves.
3. Place on either side of the patient, being careful not to pass the scoop stretcher directly over the patient.
4. Adjust height of scoop halves to match, ensuring the head and heels will be positioned within the scoop area.
5. Reattach the head end of the scoop stretcher first. This may require repositioning the patient's shoulder.
6. Carefully close the foot end of the scoop stretcher so as to not pinch the patient's posterior tissue, and reattach.
7. Secure the patient to the scoop stretcher utilizing an appropriate number of straps to ensure patient safety while moving.
8. After confirming the head and foot ends of the scoop stretcher are locked together, transfer of the patient may now occur.
9. Removal of the patient from the scoop stretcher is completed by reversing steps of application.
10. Once removed, the patient may be secured to the stretcher.

- ***Removing a Motorcycle Helmet***

1. One emergency care provider applies stabilization by placing hands on each side of the helmet with fingers on the patient's mandible. This prevents slippage if the strap is loose.
2. A second emergency care provider loosens the strap at the D-rings while stabilization is maintained.
3. The second emergency care provider places one hand on the mandible at the angle, thumb on one side, long and index fingers on the other.
4. With the other hand, the second emergency care provider holds the occipital region. This maneuver transfers the stabilization responsibility to the second emergency care provider. The emergency care provider at the top removes the helmet in two steps, allowing the second emergency care provider to readjust his hand position under the occipital region. Three factors should be kept in mind:
 - a. The helmet is egg-shaped and therefore must be expanded laterally to clear the head.
 - b. If the helmet provides full facial coverage, glasses must be removed first.
 - c. If the helmet provides full facial coverage, the nose will prevent removal. To clear the nose, the helmet must be tilted back and raised over it.
5. Throughout the removal process, the second emergency care provider maintains in-line stabilization from below to prevent head tilt.
6. After the helmet has been removed, the emergency care provider at the top replaces his hands on either side of the patient's head with his palms over the ears, taking over stabilization.
7. Stabilization is maintained from above until SMR is completed.

- ***Alternate Procedure for Removing a Motorcycle Helmet***

1. Apply steady stabilization in neutral position.
2. Remove the chin strap.
3. Remove the helmet by pulling gently on each side.
4. Apply a suitable cervical collar, and secure the patient to a long backboard as warranted.

EXTREMITY TRAUMA SKILLS: SKILL STATION 6

STUDENT MANUAL – CHAPTER 15

Before beginning, review “Skill Stations” (Chapter 3 in instructor guide).

Minimum instructors needed: 1.

Recommended time for this station is 30 minutes.

Objectives

At the conclusion of this station, the student should be able to:

1. Explain when to use a traction splint.
2. Describe the complications of using a traction splint.
3. Apply the most common traction splints: Hare® splint, Sager® splint, or Thomas splint.
4. Demonstrate pelvic stabilization techniques.
5. Demonstrate the use of and demonstrate the application of tourniquets on a mannequin model.
6. Demonstrate the use of and demonstrate the application of hemostatic agents on a mannequin model.

Equipment List

<i>Item</i>	<i>Quantity</i>
Exam gloves (non-latex, multiple sizes)	1 box each
Live model (may use students)	1
At least one of the following splints:	
• Padded long board splints (various sizes)	1
• Thomas, Sager® or Hare®	1
• Commercial pelvic splint or appropriate sheet/ blanket	1
Cravats for padding	4
Tourniquet	1
Hemostatic dressing	1

Procedures

- ***Applying a Thomas Traction Splint (Half-Ring Splint)***

The Thomas splint was used exclusively prior to the advent of modern traction devices. During World War I, its use decreased the mortality rate for battlefield femur fractures from 80% to 40%. At that time it was considered one of the greatest advancements in medical care. It is still used in some countries and in the absence of other options. Of note, gunshot wounds were the major cause of femur fractures during World War I, which by definition are open fractures. The traction splint often caused bone ends to retract back under the skin and in the pre-antibiotic era, infections were very common. Despite that, the mortality from femur fractures dropped significantly following the introduction of the Thomas splint.

To apply a Thomas traction splint, follow these steps:

1. Have your partner support the leg and maintain gentle traction, while you cut away the clothing and remove the shoe and sock to check pulse, motor function, and sensation at the foot.
2. Position the splint under the injured leg. The ring goes down, and the short side of the splint goes to the inside of the leg. Slide the ring snugly up under the hip, where it will be pressed against the ischial tuberosity.
3. Attach the top ring strap.
4. Apply padding to the foot and ankle.
5. Apply the traction hitch around the foot and ankle.
6. Maintain gentle traction by hand.
7. Attach the traction hitch to the end of the splint.
8. Increase traction by Spanish windlass action, using a stick or several tongue depressors.
9. Position two support straps above the knee and two below the knee. Do not place straps over fracture site.
10. Release manual traction, and reassess pulse, motor function, and sensation.
11. Support the end of the splint so that there is no pressure on the heel.

- ***Applying a Hare® Traction Splint***

The Hare® traction splint is the modern version of the Thomas splint. To apply the Hare® traction splint, follow these steps:

1. Position the patient on the backboard or stretcher.
2. Have your partner support the leg and maintain gentle traction, while you cut away the clothing and remove the shoe and sock to check pulse, motor function, and sensation at the foot.
3. Using the uninjured leg as a guide, pull the splint out to the correct length.
4. Position the splint under the injured leg. The ring goes down, and the short side goes to the inside of the leg. Slide the ring up snugly under the hip against the ischial tuberosity.
5. Attach the ischial strap.
6. Apply the padded traction hitch to the ankle and foot.
7. Attach the traction hitch to the windlass by way of the S-hook.
8. Turn the ratchet until the correct tension is applied.
9. Reassess pulses, motor function, and sensation of the leg.
10. Position and attach two support straps above the knee and two below the knee. Do not place over fracture site.
11. Release manual traction, and recheck pulse, motor function, and sensation.
12. To release mechanical traction (when too tight or when removing the splint), pull the ratchet knob outward and then slowly turn to loosen.

- ***Applying a Sager® Traction Splint***

The Sager® traction splint is different from the two splints already described in several ways. It works by providing counter-traction against the pubic ramus and the ischial tuberosity medial to the shaft of the femur; thus, it does not go under the leg. The hip does not have to be slightly

flexed, as with the Hare® splint, because the Sager® splint is lighter and more compact. You also can splint both legs with one splint, if needed.

The current Sager® traction splints are significantly improved over older models and may represent the state of the art in traction splints. To apply one, follow these steps:

1. Position the patient on a long backboard or stretcher.
2. Have your partner support the leg and maintain gentle traction, while you cut away the clothing and remove the shoe and sock to check the pulse, motor function, and sensation at the foot.
3. Using the uninjured leg as a guide, pull the splint out to the correct length.
4. Position the splint to the inside of the injured leg with the padded bar fitted snugly against the pelvis in the groin. Attach the strap to the thigh. The splint can be used on the outside of the leg, using the strap to maintain traction against the pubic ramus. Be very careful not to catch the genitals under the bar (or strap).
5. While your partner maintains gentle manual traction, attach the padded hitch to the foot and ankle.
6. Extend the splint until the correct tension is obtained.
7. Apply the elastic straps to secure the leg to the splint. Do not place them over the fracture site.
8. Release manual traction, and recheck pulse, motor function, and sensation.

- ***Stabilizing the Pelvis with a Sheet or Blanket***

1. Place a sheet or blanket horizontally on the lower half of the backboard prior to moving the patient.
2. Use a scoop stretcher, if available, to move the patient onto the ambulance stretcher or backboard (if clinically indicated), placing the pelvis onto a sheet or blanket. If a scoop stretcher is not available, log roll the patient as gently and quickly as possible onto the sheet or blanket.
3. Tie two diagonal corners of the sheet or blanket together with a knot at the hip on one side. Repeat with the remaining two corners, tying the knot on the opposite hip. In each case, gently and smoothly increase the tension until firm support is provided for the pelvis.

- ***Stabilizing the Pelvis with a Commercial Device***

1. Open the device and place it horizontally on the lower half of the backboard prior to moving the patient.
2. Use a scoop stretcher, if available, to move the patient onto the ambulance stretcher or backboard (if clinically indicated), placing the pelvis onto a sheet or blanket. If a scoop stretcher is not available, log roll the patient as gently and quickly as possible onto the sheet or blanket.
3. Tighten the device as the manufacturer recommends. Gently and smoothly increase the tension until firm support is provided for the pelvis. It is important to remember that the compressive forces need to be applied at the level of the greater trochanters of the femur (hip level) and not at the iliac wings.

- ***Applying a Tourniquet***

Regardless of the device used, the following procedure may be employed for hemorrhage that cannot be controlled with conventional methods of direct pressure and is anatomically appropriate to tourniquet application:

1. Identify massive extremity bleeding caused by avulsions, amputations, and lacerations.
2. If not immediately life-threatening, attempt direct pressure to control bleeding. If the patient appears to be exsanguinating or if you are unable to control bleeding quickly with direct pressure, proceed immediately to application of tourniquet.
3. Position tourniquet proximal to the source of bleeding, avoiding application over any joints on the extremity.
4. Secure the tourniquet in place, and apply circumferential pressure by a method recommended by the tourniquet manufacturer.
5. Tighten the tourniquet until bleeding stops.
6. Secure the tourniquet in place.
7. Note the time of application. Because all medical providers look at the patient's face, some advocate marking the patient's forehead with the time of tourniquet placement.
8. Do not cover the tourniquet.
9. Frequently reassess for bleeding. Increase tourniquet pressure as needed.
10. Contact receiving facility, and notify them of the application of a tourniquet.

- ***Applying a Hemostatic Agent***

1. Identify massive bleeding caused by avulsions, amputations, or lacerations.
2. Attempt direct pressure to control bleeding. If you are unable to facilitate rapid cessation of bleeding, proceed immediately to application of tourniquet for anatomically appropriate locations.
3. If bleeding is not controlled or in an area where a tourniquet cannot be applied, apply a hemostatic agent directly to the source of the bleeding.
4. With fingertip pressure and a 4 × 4 or trauma dressing, compress the wound and hemostatic agent for at least two minutes. Failure to apply pressure directly to the source of the bleeding may delay or prevent cessation of bleeding.
5. While leaving the 4 × 4 or trauma dressing in place, evaluate for cessation of bleeding. If bleeding has stopped, dress the wound as appropriate.
6. If bleeding continues, remove the 4 × 4 or trauma dressing and reapply the hemostatic agent and 4 × 4 or trauma dressing. Confirm direct pressure is being placed on the source of bleeding.

Complications include ineffectiveness of the hemostatic agent, continued bleeding (recognized and unrecognized), and tissue damage secondary to the type of hemostatic agent used. Any bleeding that cannot be controlled must be considered life-threatening. Do not delay transportation for reapplication of tourniquets or hemostatic agents. Immediately package and transport the patient upon completion of the rapid survey, and continue interventions en route to definitive care.

7

Other ITLS Courses

ITLS eTrauma

ITLS eTrauma sets the standard with online education that's interactive, flexible, accessible, and affordable for all. ITLS eTrauma covers the eight hours of ITLS Provider didactic instruction in a self-paced format that fits the non-stop lifestyle of trauma care providers. The interactive reinterpretation of the ITLS Provider course lectures in an online format utilizes video clips, quiz questions, click-and-drag matching exercises, new case studies, and more to maximize learning and retention.

The ITLS eTrauma course provides a multifaceted solution with 8 hours of CECBEMS credit for learners who can use the course in two different ways:

1. *For continuing education only:* The program is self-paced and flexible to meet the time constraints of students who juggle multiple commitments. Students looking for continuing education hours in trauma specifically or in emergency care in general can work through the 13 lessons as quickly or as slowly as their schedule permits for up to 12 months from starting the program.
2. *For ITLS Provider certification:* Students who wish to become ITLS Provider certified can use ITLS eTrauma as the didactic part of a flexible alternative to the traditional 2-day in-person ITLS Provider course as a method for earning ITLS certification.

ITLS Completer Course

After students complete ITLS eTrauma, they continue their ITLS education with a Completer Course to earn ITLS Basic or Advanced Provider certification. The Completer Course is an in-person course that features 8 hours of hands-on skills station demonstration, practice, and testing, plus the Written Exam and Practical Exam required for Provider certification. Students earn their ITLS Provider certification and card at the completion of this course, as well as 8 additional hours of CECBEMS credit.

ITLS Completer Courses are run through ITLS chapters and training centres or held in conjunction with national or international EMS events. The Completer Course provides a setting in which to learn, practice, and demonstrate proficiency of the necessary skills that comprise the practical assessment of the ITLS Provider course, thus earning ITLS Basic or Advanced certification.

ITLS Pediatric

ITLS Pediatric continues the training of the Provider courses, reflecting the same ITLS method of assessment and management but with an emphasis on the special needs of the pediatric patient. The eight-hour course teaches the principles of proper assessment, management, critical interventions, patient packaging, and rapid transport for pediatric trauma patients. It also highlights proven techniques for communicating with young patients and their parents. This course focuses on the practical training needed to make responders feel confident and competent when faced with caring for the critically injured child.

Hands-on stations include:

- Patient assessment and management
- Airway management and thoracic trauma
- Fluid resuscitation
- Spinal motion restriction and extrication — with an emphasis on pediatric immobilization devices.

The 3rd edition of the ITLS Pediatric course manual, *Pediatric Trauma Life Support for Prehospital Care Providers*, reflects the most current and effective approaches to the care of the pediatric trauma patient. The course provides 8 hours of continuing education credit.

ITLS Military

The ITLS Military Provider course combines the fundamentals of ITLS trauma assessment and treatment with recent military innovations utilized in the world's current war zones. The course adapts proven techniques taught in the civilian ITLS course to the military environment where limited resources are the rule, not the exception. The course provides 16 hours of CECBEMS credit.

ITLS Access

ITLS Access gives EMS crews and first responders the training they need to reach, stabilize and extricate trapped patients. A focus on patient care sets ITLS Access apart from other extrication courses. The eight-hour course is built around the concept of using hand tools instead of hydraulics, utilizing items commonly carried on an ambulance or first responder unit, or found on scene. The updated course includes techniques for hybrid vehicles, trucks, buses, and small aircraft in addition to its primary focus on traditional vehicles. This program is applicable to anyone who has a duty to respond to the scene of a motor vehicle collision. The course provides 8 hours of CECBEMS credit.

ITLS Instructor Update

ITLS offers an online Instructor Update course for current ITLS instructors who wish to recertify their instructor status. Successful completion of the Instructor Update for the ITLS 8th edition manual is required for instructors who wish to teach the 8th edition course. Instructors who successfully complete the Update must also meet the teaching requirements of their ITLS chapter or training centre. Chapters and training centres may not impose any additional

educational requirements.

Recertification Course for Providers

Trauma care is changing rapidly, and all professionals experience some degree of skills decay. It is reasonable that every few years ITLS providers should recertify their trauma assessment and management skills. Most ITLS provider cards are issued for a three-year period. By the end of that period, the provider must successfully complete a refresher course or an initial course to receive a new ITLS card. The following is a sample agenda for a one-day refresher course. Students should read the 8th edition ITLS manual before taking the course. They should also take a pretest, and then study the areas of weakness as identified on the pretest. Students should be prepared to take the Written Exam and Practical Exam during the recertification course. They should spend the morning reviewing skills and the afternoon reviewing patient assessment.

Sample Agenda - Provider Recertification Course

Registration and collection of pretests	30 min
Written test	60 min
Skill stations	30 min each
Lunch	60 min
Review of patient assessment	15 min
Patient assessment scenario practice and testing	120 min
Faculty meeting	30 min

Affiliate Faculty Training Program

Instructors who are chosen to be affiliate faculty members should have a brief training session to prepare them for this role. This could be scheduled on the evening before a course at which they are to teach.

Sample Agenda - Affiliate Faculty Training Program

Registration	30 min
Welcome and course overview	5 min
ITLS: A global perspective	15 min
ITLS: A local perspective	15 min
Overview of chapter/training centre policies and procedures	15 min
Roles and responsibilities of affiliate faculty	15 min
Common perils and pitfalls encountered in a “typical” ITLS class	30 min
Review of the ITLS grading system	5 min
Questions and answers	
Summary	10 min

ITLS Instructor Bridge Course

An Advanced Trauma Life Support (ATLS) or a Prehospital Trauma Life Support (PHTLS) instructor may become an ITLS instructor following successful completion of an ITLS-approved bridge course, which emphasizes ITLS patient assessment, administrative structure, and philosophy of ITLS. This course is open to any currently certified PHTLS or ATLS instructor who wishes to become an ITLS instructor. An ITLS affiliate faculty member or chapter medical director must conduct the course.

Rationale—This course has been developed to facilitate the process by which certified trauma instructors may become certified as ITLS instructors. The course assumes that the candidate is familiar with basic instructional methodology and the skills of ITLS. Successful completion certifies the candidate as an ITLS instructor candidate.

Necessary Prerequisites—The prerequisite for registering for the Instructor Bridge Course is current PHTLS or ATLS (or similar trauma training program) Instructor Certification.

Certified By—Following completion of the Instructor Bridge Course, the candidate is classified as an “instructor candidate.” In order to become certified as an ITLS instructor, the candidate must be recommended for certification by a faculty member who monitors the candidate teaching at an ITLS Provider Course. Monitoring must be within 12 months of the bridge course and include teaching a lecture and a skill station. An extension may be granted on the 12 months if considered appropriate by the chapter medical director.

Certified For—Three years.

Recertification—In order to be recertified as an ITLS instructor, the individual must complete the online Instructor Update and meet the teaching requirements of his or her ITLS chapter or training centre.

Recommended Course Length—One day.

Required Text—ITLS Instructor Manual and ITLS 8th edition Provider Manual.

Sample Agenda - ITLS Instructor Bridge Course

Registration and collection of pretests	30 min
Written test	60 min
Administrative structure	45 min
<ul style="list-style-type: none">• ITLS structure and philosophy• Chapter/training centre structure and philosophy• Chapter/training centre policy and procedures• Roles of an ITLS instructor• Precourse and postcourse material	
Break	15 min
Skill stations	30 min

<ul style="list-style-type: none"> • Pre-skill setup • Skill lesson presentation • Assistant instructors 	
Instructor candidate demonstrations	90 min
<ul style="list-style-type: none"> • Airway skills • Thoracic trauma skills • Vascular access skills • Spine management skills • Extremity trauma skills 	
Lunch	60 min
Course objectives, lesson plans, and curriculum	30 min
<ul style="list-style-type: none"> • Advanced ITLS course lesson plan • Basic ITLS course lesson plan • Combined ITLS course lesson plan • Teaching stations • Testing stations 	
ITLS patient assessment	30 min
Patient assessment demonstration	15 min
Instructor candidate demonstrations: patient assessment teaching and testing	90 min
Faculty meeting	

ITLS Provider Bridge Course

ITLS offers a “bridge” courses for experienced providers of other trauma courses who wish to transition to ITLS. The experienced provider may become an ITLS provider following successful completion of an ITLS-approved bridge course, which emphasizes ITLS patient assessment, and the other skills that are included in the ITLS Provider Course.

Any student who does not successfully complete the Provider Bridge Course must become ITLS certified by taking a full ITLS Provider Course.

Additional student handouts for the Provider Bridge Course are available from the International Office.

Necessary Prerequisites—The prerequisite for registering for the Provider Bridge Course is current PHTLS (or similar trauma training program) Provider Certification.

Certified By—Following successful completion of the Provider Bridge Course, the provider will be certified as an ITLS Provider (Advanced or Basic).

Certified For—Three years.

Recertification—In order to be recertified, the provider must attend an ITLS Recertification course or an ITLS Provider course.

Recommended Course Length—One day.

Required Text—ITLS 8th edition Provider Manual.

Sample Agenda - ITLS Provider Bridge Course

08:00 – 08:30	—	Welcome and Collection and Review of Pretest
08:30 – 09:15	—	Patient Assessment Lecture or DVD
09:15 – 09:45	—	Airway Lecture
09:45 – 10:15	—	Head Trauma Lecture
10:15 – 10:30	—	Break
10:30 – 11:00	—	Shock Lecture
11:00 – 11:20	—	Skill Station
11:20 – 11:40	—	Skill Station
11:40 – 12:00	—	Skill Station
12:00 – 12:20	—	Skill Station
12:20 – 13:05	—	Lunch
13:05 - 13:40	—	Written Test
13:40 -	—	Patient Assessment Test (time allocated depends on number of students and instructors)

Skill Stations:

1. Assessment Skills
2. Airway Skills
3. Thoracic Trauma Skills
4. Vascular Access Skills
5. Spine Management Skills
6. Extremity Trauma Skills
7. Assessment Skills

8

Policies and Procedures

Policy and procedure manuals for each chapter or training centre are available through their offices.

THE ITLS ORGANIZATION: INTERNATIONAL TRAUMA LIFE SUPPORT

ITLS is a global organization dedicated to preventing death and disability from trauma through education and emergency trauma care. ITLS is a U.S. not-for-profit organization incorporated in Alabama with offices in Illinois. It is a tax-exempt organization under Section 501 (c) (3) of the IRS code. ITLS is supported by student fees, book sales, and royalties from sales of books and other educational materials.

As stated in its articles of incorporation, the purpose of the organization is to provide trauma training for emergency personnel. However, the proper disposition of the program—including the analysis of methods of education of the adult learner, assessment of the state of the art in trauma care, research in trauma care and patient assessment, efficient management of the organization, provision of venues for organizational meetings, and support of the organization's committees—clearly deals with issues within the purview of ITLS.

ITLS, as a nonprofit corporation, is governed by its Board of Directors. Chapter delegates at the organization's annual meeting elect the members of the Board of Directors. The Board members have rotating terms of 3 years. Each chapter is allocated a number of delegates to the annual meeting, which is determined by the number of students trained in that chapter during the previous 2-year period. To qualify as a chapter's delegate, a person must be an ITLS provider, instructor, chapter coordinator, chapter medical director or person engaged in an administrative capacity for that chapter.

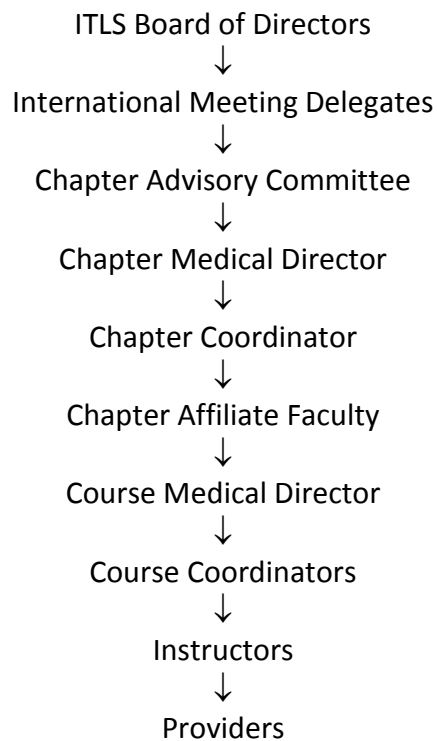
ITLS also designates training centres which are authorized to conduct certified ITLS courses. In most cases, ITLS training centres are proprietary organizations which do not qualify for chapter designation. ITLS training centres typically train their own personnel and clients in ITLS. They do not participate in the governance process of ITLS. Because it is driven by the input from its chapters and training centres, ITLS is sensitive and responsive to its stakeholders.

Since 1994, ITLS been managed by the Illinois College of Emergency Physicians (ICEP). The ITLS Board of Directors regularly evaluates the management services provided to the organization.

International Trauma Conference

Each year the ITLS International Trauma Conference is held to provide educational sessions on trauma and EMS education, and networking with ITLS instructors and providers around the world. The annual business meeting of the organization is held during the International Trauma Conference. Representatives from each chapter attend, as well as persons interested in becoming ITLS providers and instructors or those who are working with new ITLS chapters and training centres. The ITLS International Trauma Conference has been held annually since January 1985.

ITLS Organizational Chart



ITLS CHAPTER AND TRAINING CENTRE STRUCTURE

The educational and business mechanisms of the management of ITLS within a given chapter or training centre are based on two broad groups: the faculty and providers, and the administrative leaders and course managers. Chapters and training centres function similarly except that training centres do not participate in the governance of ITLS. These groups are defined by the following levels.

Faculty and Providers

- Affiliate Faculty
- Basic ITLS Instructor
- Advanced ITLS Instructor
- Pediatric ITLS Instructor
- ITLS Access Instructor
- Basic ITLS Provider
- Advanced ITLS Provider
- Pediatric ITLS Provider
- ITLS Access Provider
- ITLS Military Provider

Administrative Leaders of the Chapter and Training Centre Program

- Advisory Committee Member
- Advisory Committee Chairperson
- International Meeting Delegate (chapters only)
- Medical Director
- Coordinator

Course Managers Within the ITLS Program

- Course Medical Director
- Course Coordinator
- Affiliate Faculty

ITLS CHAPTER AND TRAINING CENTRE RESPONSIBILITIES

The following is a list of some of the ongoing responsibilities of ITLS chapters and training centres. This list is not all-inclusive and may include other responsibilities.

- Coordinate local ITLS courses.
- Collect data, including the number of providers and various faculty members.
- Disseminate information from the ITLS office to the constituents of the chapter or training centre.
- Provide information to the ITLS office on ITLS advisory committee activities and any new

concepts developed.

- Provide quality assurance for ITLS courses.
- Provide local financial management for ITLS programs.
- Market ITLS in their geographic area.
- Appoint delegates to represent the chapter at the ITLS International Trauma Conference annual business meetings.
- Use the ITLS course management system (CMS) and remit course fees at least quarterly to ITLS.
- Rapidly distribute ITLS cards and certificates to persons successfully completing ITLS courses.

ITLS RESPONSIBILITIES TO THE CHAPTERS AND TRAINING CENTRES

The following is a list of ongoing activities and services that ITLS provides its programs. This list is not intended to be all-inclusive.

- Disseminate current information regarding changes in protocols, changes in ITLS teaching materials, and updates on revisions to ITLS policies and procedures.
- Provide resources and organizational materials to assist in developing ITLS programs.
- Provide a clearinghouse for ITLS committee recommendations.
- Provide quality assurance at an international level by enforcing the guidelines and standards recommended by the ITLS Board of Directors and committees.
- Conduct the annual meeting and trauma conference for constituents from all chapters and training centres to be represented.
- Prepare financial reports.
- Provide vehicles to communicate with ITLS providers, instructors, and persons interested in the organization.
- Distribute ITLS educational materials and specialty items.

ITLS CERTIFICATIONS

Basic ITLS Provider

Prerequisites—The candidate must be an entry-level EMS provider such as a first responder, basic emergency medical technician, or other allied health professional who holds suitable qualifications for entry.

Requirements for Certification—The candidate must attend all the lectures and skills stations, and obtain a written test score of at least 74% and at least “adequate” on the patient assessment test. The local chapter or training centre may require a higher score.

Length of Certification—ITLS recommends a 3-year certification period. An ITLS chapter or training may change the period to 2 or 4 years, if reflected in their policy and procedure manual and approved by the Board of Directors.

Recertification—The provider must attend an approved basic ITLS recertification course prior to the expiration date on the card or complete the full ITLS provider course.

Advanced ITLS Provider

Prerequisites—The candidate must be an advanced-level practitioner such as a certified/licensed EMT–Intermediate, paramedic, registered nurse, physician assistant, physician, or other allied health professional. (*The definition of an advanced-level practitioner is one who can perform advanced airway procedures, perform IV cannulation, and administer IV fluids. Advanced airway management is defined as the use of a blind insertion airway device, or endotracheal tube.*)

Requirements for Certification—The candidate must attend all the lectures and skill stations, and obtain a written test score of at least 74% and at least “adequate” on the patient assessment test. The local chapter or training centre may require a higher score.

Length of Certification—ITLS recommends a 3-year certification period. An ITLS chapter or training centre may change the period to 2 or 4 years, if reflected in their policy and procedure manual and approved by the Board of Directors.

Recertification—The provider must attend an approved advanced ITLS recertification course prior to the expiration date on the card or complete the full ITLS provider course.

Pediatric ITLS Provider

Prerequisites—It is strongly suggested that the candidate be a certified basic or advanced ITLS or PHTLS provider.

Requirements for Certification—The candidate must attend all the lectures and skill stations, and obtain a written test score of at least 74% and at least “adequate” on the patient

assessment test. The local chapter or training centre may require a higher score.

Length of Certification—ITLS recommends a 3-year certification period. An ITLS chapter or training centre may change the period to 2 or 4 years, if reflected in their policy and procedure manual and approved by the Board of Directors.

Recertification—The provider must attend an approved pediatric ITLS recertification course prior to the expiration date on the card or complete a certified pediatric ITLS provider course.

ITLS Access Provider

Prerequisites—The candidate must be in EMS, police or fire service in at least a first responder level.

Requirements for Certification—The candidate must attend all the lectures and skill stations. The local chapter or training centre may increase these requirements.

Length of Certification—ITLS recommends a 3-year certification period. An ITLS chapter or training centre may change the period to 2 or 4 years, if reflected in their policy and procedure manual and approved by the Board of Directors.

Recertification—The provider must attend an approved ITLS Access provider course.

ITLS Instructors

ITLS courses must be taught by certified ITLS instructors. To become an ITLS instructor, one must:

1. Successfully complete an ITLS Provider course and achieve Instructor Potential.
2. Successfully complete an ITLS Instructor course. Effective 2015, ITLS has adopted a hybrid model for Instructor training:
 - The student achieves Instructor Potential on the Provider course.
 - The student completes the online component of the Instructor course.
 - The student completes the classroom component of the Instructor course.
 - The student (instructor candidate) is monitored teaching a lecture, skill station and testing of a Provider course.

Basic ITLS instructors can teach only basic ITLS courses. Advanced ITLS instructors can teach basic or advanced ITLS courses.

Physicians who are Board certified in emergency medicine, or who are ATLS providers, or who actively participate in and teach trauma care may take the ITLS Instructor course without taking the Provider course.

In unusual circumstances a physician or other EMS provider (EMT, nurse, nurse practitioner, or physician assistant) who has not taken the ITLS Instructor course may help teach an ITLS course.

However, this may be done only with the permission of the chapter/training centre medical director or coordinator. These requirements are necessary to maintain the high quality of ITLS courses.

Recertification—ITLS instructors maintain their instructor certification by successfully completing the ITLS online Instructor Update and satisfying the teaching requirements of the chapter or training centre. The chapter or training centre may not require additional educational sessions for recertification.

Removal Procedure—The chapter or training centre shall establish a mechanism, through its advisory committee, to revoke the certification of an ITLS instructor should the need arise. In addition, a method should be established to provide the instructor with due process in the event that the instructor certification is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of an instructor, the advisory committee may initiate an investigation. The instructor's certification status may also be suspended pending the outcome of the investigation. The chairperson of the advisory committee shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the instructor will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations to the advisory committee for action including, but not limited to, one or more of the following:

- a. Temporary suspension of instructor certification for a specified period of time
- b. Permanent suspension of instructor certification
- c. Remedial training
- d. Supervision by an affiliate faculty for a specified period of time

Pediatric ITLS Instructor

Note: Basic instructors cannot teach advanced skills or assessment in the Pediatric ITLS course.

Requirements—Effective 2015, to qualify as a pediatric ITLS instructor, a person must achieve instructor potential on the Pediatric Provider course, complete both the online and classroom components of the ITLS Instructor course, and be monitored teaching at a Pediatric Provider course. Persons who are experienced instructors of other EMS courses are eligible to take the Instructor Bridge course in lieu of the full instructor course.

ITLS pediatric instructors must be updated on the 3rd edition Pediatric ITLS course material prior to teaching.

Length of Certification—ITLS recommends a 3-year certification period. An ITLS chapter or training centre may change the period to 2 or 4 years, if reflected in their policy and procedure

manual and approved by the Board of Directors.

Recertification—Pediatric ITLS instructors may maintain their instructor certification completing the online Instructor Update and satisfying the teaching requirements of their chapter or training centre.

Removal Procedure—The chapter or training centre shall establish a mechanism, through its advisory committee, to revoke the certification of a pediatric ITLS instructor should the need arise. In addition, a process should be established to provide the instructor with due process in the event that the instructor certification is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of an instructor, the advisory committee may initiate an investigation. The instructor's certification status may also be suspended pending the outcome of the investigation. The chairperson of the advisory committee shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the instructor will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations to the advisory committee for action including, but not limited to, one or more of the following:

- a. Temporary suspension of instructor certification for a specified period of time
- b. Permanent suspension of instructor certification
- c. Remedial training
- d. Supervision by an affiliate faculty for a specified period of time

ITLS Access Instructor

Prerequisites—Recognized and certified training and experience as an adult educator. Recognized and certified training and experience as a vehicle rescue provider or instructor.

Requirements for Certification—The candidate must be recommended as a potential instructor by an affiliate faculty during an ITLS Access course. Becoming an ITLS Access instructor is similar to an apprenticeship program. There is no formal course, as the content is separate from the usual ITLS core material. The advisory committee may modify these requirements.

Length of Certification—ITLS recommends a 3-year certification period. An ITLS chapter or training centre may change the period to 2 or 4 years, if reflected in their policy and procedure manual and approved by the Board of Directors.

Recertification—The instructor must teach at least one ITLS access provider course per year for the years of certification. Instructor updates or refresher courses may be required as deemed necessary by the advisory committee.

Removal Procedure—The chapter or training centre shall establish a mechanism, through its

advisory committee, to revoke the certification of an ITLS Access instructor should the need arise. In addition, a process should be established to provide the instructor with due process in the event that the instructor certification is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of an instructor, the advisory committee may initiate an investigation. The instructor's certification status may also be suspended pending the outcome of the investigation. The chairperson of the advisory committee shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the instructor will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations to the advisory committee for action including, but not limited to, one or more of the following:

- a. Temporary suspension of instructor certification for a specified period of time
- b. Permanent suspension of instructor certification
- c. Remedial training
- d. Supervision by an affiliate faculty for a specified period of time

ITLS APPOINTMENTS

Advisory Committee Member

Duties and Responsibilities—Advise the chapter or training centre medical director and coordinator on matters concerning the ITLS program on issues such as the following:

- Development of policy and procedures
- Promulgation of ITLS throughout the area
- Development of long-range and strategic plans
- Dissemination of information at the local level
- Disciplinary issues

Other Duties

- Provide mechanism through which personnel throughout the area have a voice in ITLS-related matters
- In conjunction with the medical director and coordinator, make recommendations for appointment of affiliate faculty
- Oversee the due process of revocation for ITLS instructors, affiliate faculty, course coordinators, and course medical directors
- Execute other duties as assigned

Appointed By—The organization holding the charter. Each program should describe its appointment process in its policy and procedure manual.

Length of Appointment—Three years or whatever length is deemed appropriate by the chapter

or training centre.

Prerequisites—Set by the organization holding the charter.

EXAMPLE: Affiliate faculty with extensive knowledge and experience in ITLS and the management of educational programs.

Appointment Procedure—The advisory committee is established by the organization holding the charter. It may accomplish this by requesting the appointee's commitment to the development of ITLS in its area. A broad base of providers representing all geographical areas should be selected for the committee. Representatives should be basic and advanced EMS providers and other allied health professionals. The developers should invite representation from area emergency medical organizations to participate.

Vacancy Procedure—Set by the organization holding the charter.

EXAMPLE: A curriculum vitae (résumé), recommendations by two current affiliate faculty, and a letter stating intent should be sent to the advisory committee. The committee shall select the most suited for the position from the pool of applicants.

Reappointment Procedure—Set by the organization holding the charter.

EXAMPLE: The performance of the advisory committee members will be subject to review to determine the advisability of reappointment. The review will be completed by the entity or organization that appointed the member with recommendation by the medical director. The review will be held on a schedule consistent with the length of term of the committee. It is suggested that one-third of members be reviewed annually.

Removal Procedure—The program shall establish a mechanism, through the entity or organization that appointed the advisory committee, to remove the designation of an advisory committee member should the need arise. In addition, a process shall be established to provide the advisory committee member with due process in the event that the designation is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of the advisory committee member, the entity or organization that appointed the advisory committee may initiate an investigation. The advisory committee member designation may also be suspended pending the outcome of the investigation. The entity or organization that appointed the advisory committee member shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the advisory committee member will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations for action including, but not

limited to, one or more of the following:

- a. Temporary suspension of the advisory committee member's designation for a specified period of time
- b. Permanent suspension of the advisory committee member designation
- c. Remedial training
- d. Supervision by the advisory committee and/or coordinator

Advisory Committee Chairperson

Duties and Responsibilities

- Lead and supervise the ITLS committee
- Serve as the liaison between the ITLS advisory committee and the charter holder
- Advise the organization holding the charter on issues relative to the operation of the ITLS program and the progress of the committee
- Oversee the operation of the ITLS advisory committee
- Appoint ad hoc subcommittees as needed to address specific ITLS issues
- Provide leadership for the ITLS advisory committee for strategic and long-range planning
- Appoint a special committee to execute due process in the event of revocation
- Execute other duties as assigned

Prerequisites

- Must be a member of the advisory committee.
- The nominee should have extensive experience in managing continuing education courses and demonstrate an in-depth knowledge of ITLS
- Experience as a committee chairperson is preferred

Appointed By—The organization holding the charter.

Length of Appointment—One to three years as deemed appropriate.

Appointment Procedure—Set by the organization holding the charter.

EXAMPLE: The ITLS advisory committee chairperson will be appointed by the ITLS charter holder from the body of the ITLS advisory committee

Reappointment Procedure—Set by the organization holding the charter.

EXAMPLE: The performance of the committee chairperson should be reviewed on an annual basis by the medical director, peer review, and/or the charter holder's board of directors to determine the advocacy of reappointment. Should the chairperson not demonstrate satisfactory performance or not wish to continue, the charter holder's board of directors shall ask for his or her resignation and initiate a search for qualified candidates.

Removal Procedure—The program shall establish a mechanism, through the entity or

organization that appointed the advisory committee chairperson, to remove the designation of an advisory committee chairperson should the need arise. In addition, a process shall be established to provide the advisory committee chairperson with due process in the event that the designation is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of the advisory committee chairperson, the entity or organization that appointed the advisory committee may initiate an investigation. The advisory committee chairperson designation may also be suspended pending the outcome of the investigation. The entity or organization that appointed the advisory committee chairperson shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the advisory committee chairperson will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations for action including, but not limited to, one or more of the following:

- a. Temporary suspension of the advisory committee chairperson's designation for a specified period of time
- b. Permanent suspension of advisory committee chairperson designation
- c. Remedial training
- d. Supervision by the advisory committee and/or coordinator

International Meeting Delegate

Each year ITLS conducts the International Trauma Conference at which educational sessions are held and the business of the organization is conducted. Each chapter is allocated a number of voting international meeting delegates to represent the chapter at the conference. The number of votes a chapter is awarded is determined by the number of ITLS students trained during the prior 2 years. Under the bylaws, students are counted based on course records and payments received by the international office by March 31 of the following year. The selection and appointment of international meeting delegates is the responsibility of the chapter.

Delegates must be affiliated with the chapter as an ITLS provider, instructor, chapter medical director, chapter coordinator, or person performing an administrative role for that chapter.

Duties and Responsibilities

- Represent the ITLS chapter as an international meeting delegate
- Engage in dialogue regarding the direction of the organization
- Participate in the election process by attending all sessions and voting for qualified candidates
- Communicate the perspective of the chapter with regard to major issues
- Disseminate information to all members of the advisory committee as required

- Communicate the proceedings of the meeting with the chapter in the manner prescribed by the chapter

Prerequisites

- Must be an ITLS provider, instructor, chapter medical director, chapter coordinator, or person engaged in an administrative role for the chapter
- Should have a strong working knowledge of ITLS and related issues
- Orientation by the chapter medical director and/or the advisory committee to the position

Appointed By—ITLS advisory committee, chapter medical director, or charter holder.

Length of Appointment—Duration of the annual international meeting or whatever length is deemed appropriate by the chapter.

Chapter or Training Centre Medical Director

Duties and Responsibilities

- Responsible for the management of the ITLS program, in both educational and business-related matters
- Provide consistent leadership for the program.
- Stimulate the evolution and consistency of ITLS programs
- Ensure the availability of training and the quality of the programs offered
- Ensure the medical appropriateness of the course content
- Ensure that the program is taught in a manner consistent with the EMS laws of the jurisdiction in which the program operates
- Ensure the medical quality of ITLS courses throughout the program
- Advise the ITLS advisory committee on the appointments of affiliate faculty
- Represent ITLS as an international meeting delegate, if possible
- Regularly review the courses held under the auspices of the appointed course directors
- Relieve a course director of this title if he or she fails to present courses that are consistent with ITLS standards, or where management of the course impedes student education or the reputation of the ITLS program.
- Relieve a course coordinator of this title if he or she fails to present courses that are consistent with ITLS standards, or where management of the course impedes student education or the reputation of the ITLS program.
- In association with the chapter or training centre coordinator, facilitate the daily operation of the ITLS program
- Oversee the appeal of due process activities
- Execute other duties as assigned

Prerequisites

- Must be a physician licensed to practice medicine within the jurisdiction of the chapter or training centre area

- Other criteria developed by the charter holder

EXAMPLES:

- Should be a physician involved in emergency medicine with a background in prehospital care
- Should be an ITLS instructor

Appointed By—ITLS advisory committee and/or the sponsoring organization holding the charter.

Length of Appointment—Two years or whatever length is deemed appropriate by the charter holder. The performance of the director should be reviewed on an annual basis to determine the advocacy of reappointment.

Removal Procedure— A process should be established to remove the designation of a medical director should the need arise. In addition, a process should be established to provide the medical director with due process in the event that the designation is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of the medical director, the advisory committee may initiate an investigation. The medical director's designation may also be suspended pending the outcome of the investigation. The entity or organization that appointed the medical director shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the medical director will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations for action including, but not limited to, one or more of the following:

- a. Temporary suspension of the medical director's designation for a specified period of time
- b. Permanent suspension of chapter or training centre medical director's designation
- c. Remedial training
- d. Supervision by the advisory committee and/or chapter or training centre coordinator

Chapter or Training Centre Coordinator

Duties and Responsibilities

- In association with medical director, facilitate the daily operation of the ITLS program
- Provide consistent leadership for the program
- Stimulate the evolution and consistency of ITLS programs
- Ensure the availability of training and the quality of the programs offered
- Provide financial management and oversight of the ITLS programs, including organization of finances

- Ensure the quality and consistency of ITLS, focusing primarily on the administrative aspects
- Advise the advisory committee regarding the appointment of affiliate faculty
- Represent ITLS as an international meeting delegate if appointed
- Demonstrate proficiency with the ITLS course management systems (CMS)
- Provide administrative support for the ITLS program
- Execute the plans and enforce the policies of the ITLS Policy and Procedure Manual
- Coordinate due process activities of the advisory committee
- Execute other duties as assigned

Prerequisites

- Must possess and maintain affiliate faculty status or be the administrative designate of the ITLS chapter or training centre
- Should be an individual who has experience in managing continuing education courses and has demonstrated an in-depth knowledge of prehospital and hospital trauma care
- Fulfill other criteria as determined by the chapter or training centre

Appointed By—ITLS advisory committee and/or the sponsoring organization holding the charter.

EXAMPLE: The coordinator is elected by the ITLS advisory committee and serves a 2-year term or whatever is deemed appropriate by the charter holder. The performance of the coordinator should be reviewed on an annual basis to determine the advocacy of reappointment. Should the coordinator not demonstrate satisfactory performance or not wish to continue, the ITLS advisory committee shall initiate a search for a qualified candidate.

Length of Appointment—Two years or whatever length is deemed appropriate by the charter holder.

Removal Procedure—A process should be established to remove the designation of a coordinator should the need arise. In addition, the chapter or training centre shall establish a method to provide the chapter or training centre coordinator with due process in the event that the designation is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of the coordinator, the advisory committee may initiate an investigation. The coordinator's designation may also be suspended pending the outcome of the investigation. The entity or organization that appointed the coordinator shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the coordinator will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations for action including, but not limited to, one or more of the following:

- a. Temporary suspension of the coordinator's designation for a specified period of time
- b. Permanent suspension of coordinator's designation
- c. Remedial training
- d. Supervision by the medical director and/or advisory committee

Affiliate Faculty

Duties and Responsibilities

- Monitor the quality of ITLS courses in the chapter or training centre
- Serve as a resource person for course medical directors and course coordinators
- Monitor new ITLS instructor candidates
- Participate as faculty for instructor courses and updates
- Participate as faculty for provider courses
- Participate in the ITLS advisory committee structure

EXAMPLES:

- Serve as primary liaison between ITLS instructors and the ITLS advisory committee
- Disseminate information to providers and instructors
- Promote ITLS
- Provide valuable input affecting decisions made at the local level
- Execute other duties as assigned

Prerequisites

- Must keep ITLS instructor certification current
- Should complete a ITLS advisory committee approved affiliate faculty training program
- Must possess considerable knowledge with respect to the ITLS structure and operations
- Must be willing to maintain active involvement with the development of ITLS educational material
- Must possess a willingness to promote actively the growth and development of the ITLS program
- Fulfill other criteria as assigned

Appointed By—ITLS advisory committee and/or medical director. Affiliate faculty should be equally distributed throughout the chapter or training centre.

EXAMPLE OF APPOINTMENT PROCEDURE: A curriculum vitae (résumé), recommendations by two current affiliate faculty, and a letter stating intent should be sent to the advisory committee. The committee shall vote on the appropriateness of the appointment.

EXAMPLE OF REAPPOINTMENT PROCEDURE: Reappointment of affiliate faculty should be determined by their yearly activities, which should include participation in at least two ITLS courses per year and/or on the needs and demands of the program. Reappointment is not

considered an automatic right or due.

Length of Appointment—Twelve months or whatever length is deemed appropriate by the charter holder.

Removal Procedure— A process should be established to revoke the affiliate faculty designation of an ITLS instructor (basic, advanced, or pediatric) should the need arise. In addition, a process should be established to provide the affiliate faculty member with due process in the event that the designation is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of the affiliate faculty member, the advisory committee may initiate an investigation. The affiliate faculty member's designation may also be suspended pending the outcome of the investigation. The chairperson of the advisory committee shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the affiliate faculty member will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations to the advisory committee for action including, but not limited to, one or more of the following:

- a. Temporary suspension of the affiliate faculty member's designation for a specified period of time
- b. Permanent suspension of affiliate faculty member's designation
- c. Remedial training
- d. Supervision by the medical director and/or coordinator

Course Medical Director

To be certified, an ITLS course must be taught by registered ITLS instructors under the sponsorship of ITLS International. The course does not certify future performance nor does it confer license of any kind on successful completion.

ITLS strongly recommends on-site involvement of physician instructors in ITLS courses to integrate materials into the local emergency medical service systems, as well as to provide medical oversight.

Each course must have a medical director who is available for consultation during the course. The course medical director acknowledges accountability by being familiar with all course content and ensuring the course is taught per guidelines of the policy and procedures and ITLS International.

Each course must also have a designated affiliate faculty member on site to provide the necessary quality assurance, overall responsibility, and ensure adherence to ITLS standards.

Duties and Responsibilities

- Provide clinical oversight during the course
- Act as a resource to the affiliate faculty member(s) present
- Promote professional relationship with EMS providers during the course
- In the absence of an instructor, be prepared to present information
- Chair faculty meetings

Prerequisites

- Must be a licensed physician within the jurisdiction of the ITLS program
- Should be familiar with EMS systems and prehospital care and have experience and training related to trauma patients
- Should be an ITLS instructor or should serve as co-director for one course with a physician ITLS instructor

Approved By—Chapter or training centre medical director.

Length of Appointment—The time frame of the scheduled ITLS course.

Removal Procedure—A process should be established to remove the designation of a course medical director should the need arise. In addition, a process should be established to provide the course medical director with due process in the event that the designation is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of the course medical director, the advisory committee may initiate an investigation. The course medical director's designation may also be suspended pending the outcome of the investigation. The chairperson of the advisory committee shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the course medical director will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations to the advisory committee for action including, but not limited to, one or more of the following:

- a. Temporary suspension of the course medical director's designation for a specified period of time
- b. Permanent suspension of course medical director's designation
- c. Remedial training
- d. Supervision by the medical director and/or coordinator

Course Coordinator

Duties and Responsibilities

- Must be present throughout the course and will serve as the primary resource for information and questions of an administrative nature

- Coordinate all aspects of the ITLS course:
 - Proper precourse preparation
 - Ordering of course manuals
 - Ordering and distribution of ITLS educational resources to students and lecturers
 - Arranging for equipment
 - On-site coordination, including meals and breaks
 - Entering course, student and faculty data into the ITLS course management system (CMS)
 - Appropriate placement of equipment in working order
 - Flow of skills stations
 - Patient assessment practice and testing stations
 - Grading of written exams
 - Submission of the appropriate paperwork and fees to the chapter or training centre office within required time frame
- Must work closely with the course medical director, affiliate faculty, and local ITLS office
- Execute other duties as assigned

Prerequisites

- ITLS certification preferred, but not required
- Experienced EMS educator and program organizer with thorough knowledge of the ITLS program
 - A demonstrated history of coordinating and conducting multiple session programs (e.g., ACLS, PALS, etc.) is helpful
- Able to coordinate all requirements precourse, during the course, and postcourse follow-up
- These prerequisites may be modified by the chapter or training centre

Appointed By—Chapter or training centre coordinator

Length of Appointment—Determined by the charter holder

Removal Procedure—A process should be established to remove the designation of a course coordinator should the need arise. In addition, a process should be established to provide the course coordinator with due process in the event that the designation is revoked.

EXAMPLE: If written allegations are made regarding inappropriate conduct by or an inadequate knowledge base of the course coordinator, the advisory committee may initiate an investigation. The course coordinator's designation may also be suspended pending the outcome of the investigation. The chairperson of the advisory committee shall appoint a three-member special committee to conduct the investigation. The investigation shall be completed within 60 days. Upon completion, the course coordinator will be informed, in writing, of the basis of the allegations and given an opportunity to refute the allegations, in writing, within 30 days.

The special committee will then make recommendations to the advisory committee for action including, but not limited to, one or more of the following:

- a. Temporary suspension of the course coordinator's designation for a specified period of time
- b. Permanent suspension of course coordinator's designation
- c. Remedial training
- d. Supervision by the medical director and/or coordinator

ITLS Instructor Reciprocity with Chapters and Training Centres

ITLS instructor certification will be accepted from any other ITLS chapter or training centre. An instructor coming into a different ITLS chapter or training centre must apply to the local ITLS coordinator for reciprocity. This application will include the instructor's past activities regarding ITLS teaching and a letter confirming good standing from his or her former chapter/training centre coordinator or medical director.

Once approved by the ITLS coordinator, an affiliate faculty member may monitor the instructor while teaching. On completion of monitoring, the affiliate faculty member will send his or her recommendation to the ITLS coordinator. Some chapters and training centres require the incoming instructor to meet with the medical director to ensure understanding of local policy and procedures.

ITLS Provider Reciprocity with Chapters and Training Centres

ITLS providers from other ITLS chapters and training centres will be accepted to the date of expiration of their certification card.

9

Student Guide

STUDENT GUIDE TO ITLS

ITLS Mission Statement

ITLS is a global organization dedicated to preventing death and disability from trauma through education and emergency trauma care.

What to Wear at the Course

ITLS is a practical course that stresses hands-on teaching. You should wear comfortable clothes that you do not mind getting dirty. Jeans and sweatshirts are appropriate.

How to Prepare for the Course

You absolutely must read and study the ITLS book before the course. There is not enough time in 16 hours to learn the written material, master the skills, and imprint the ITLS patient assessment method. The philosophy of a hands-on course is to be familiar with the material beforehand, to review the concepts briefly, and then to spend most of the time practicing the practical applications of those concepts. The best method of preparation is to do the following:

1. Read the book once including skill stations that are to be taught in your course. You will be notified if you are to be responsible for any of the optional skills.
2. Take the pretest and compare your answers to the pretest answer key.
3. Reread the book, paying particular attention to those subjects identified as weaknesses by the pretest.
4. Memorize the ITLS Primary Survey, ITLS Ongoing Exam and ITLS Secondary Survey.
5. If possible, practice patient assessment using the team approach as outlined in Chapter 3.

Grades

At the end of the course, you will take a written exam and a practical test. The practical test is patient assessment. You will not be required to test on each of the skills taught in the skill stations. However, you will be required to use those skills correctly in the management of your simulated patients. The written test is composed of 50 questions to be completed in 60 minutes and requires a grade of at least 74% to pass. Patient assessment is a practical exam, and you are graded on your overall management of the problem. Students demonstrating superior performance may be invited to become instructor candidates.

Schedule

You will be sent a schedule for the course. ITLS is a very intensive learning course, and time must be used efficiently. You must be familiar with your skill station schedule so that you have time to practice each skill during the brief time available.

How to Function as a Team

1. Decide who will be the team leader, rescuer 2, and rescuer 3. Change each time you practice so that each member gets to be team leader once.
2. Before entering the room, be sure you understand your duties.

Team Leader. You are responsible for the overall performance of the team. You must direct other team members to do certain actions if they do not do them on their own. You must perform the scene size-up, see that the spine is stabilized, and perform the patient assessment. You are the only member who should interact directly with the instructor. The other team members report to you, and you are responsible for their actions. You should help carry some of the equipment to the patient.

Rescuer 2. While the team leader is sizing up the scene, you should get the cervical collar, trauma box, and oxygen equipment and carry it to the patient. Do not approach the patient until the team leader states that it is safe to do so. When you approach the patient, you will place the equipment within easy reach and immediately stabilize the patient's cervical spine (unless the team leader elects to do this). You must maintain stabilization of the neck with either your hands or your knees until the patient is transferred to a backboard and the head immobilizer is applied. You are also in charge of maintaining the airway and appropriate ventilation. The team leader should give you ventilation instructions as soon as the airway has been examined. If the team leader forgets to give you instructions, you may ask, "Are there any ventilation instructions?"

Rescuer 3. While the team leader is surveying the scene, you should get the backboard and head immobilizer, to have ready if needed. You should assist with stopping bleeding, removing a helmet, dressing wounds, and performing other tasks as delegated. If directed, you should help transfer the patient to the backboard and secure the straps. Team members do *not* have to stand around waiting to be told to do something, but they must *not* take over the evaluation of the patient. The team leader may elect to stabilize the neck but is still responsible for assessing the patient and ensuring that all procedures are performed. This is accomplished more easily if rescuer 2 is allowed to maintain stabilization.

Review the Ground Rules for Teaching and Evaluation and the Assessment Skills in Chapter 3 of the ITLS student manual.

Glasgow Coma Scale

Eye Opening		Verbal Response		Motor Response	
	Points		Point		Points
Spontaneous	4	Oriented	5	Obeys commands	6
To voice	3	Confused	4	Localizes pain	5
To pain	2	Inappropriate words	3	Withdraws	4
None	1	Incomprehensible sounds	2	Abnormal flexion	3*
		Silent	1	Abnormal extension	2**
				No movement	1

Teasdale G, Jennett B. (1974). "Assessment of coma and impaired consciousness. A practical scale.". *Lancet* **13** (2): 81–4. [doi:10.1016/S0140-6736\(74\)91639-0](https://doi.org/10.1016/S0140-6736(74)91639-0). [PMID 4136544](https://pubmed.ncbi.nlm.nih.gov/4136544/).

10

Optional Skill Stations

OPTIONAL SKILL 1: DIGITAL INTUBATION

Minimum instructors needed: 1

Objectives

Upon completion of this skill station, the student should be able to:

1. Discuss the indications for digital intubation.
2. Perform digital intubation.

The original method of endotracheal intubation, widely known in the 18th century, was the tactile or digital technique. The intubator merely felt the epiglottis with the fingers and slipped the endotracheal tube distally through the glottic opening. Recently the technique has been refined and demonstrated to be of use in the prehospital setting for a wide variety of patients.

Indications

Tactile orotracheal intubation is particularly useful for deeply comatose or cardiac arrest patients who:

- Are difficult to position properly for direct laryngoscopic visualization
- Are somewhat inaccessible to the full view of the rescuer
- May be at risk of cervical spine injury
- Have facial injuries that distort anatomy
- Have copious oropharyngeal bleeding or secretions that impair visualization of the airway

You may prefer to perform tactile intubation when you are more confident in your ability with this technique, or when a laryngoscope fails or is not immediately available. The technique is most valuable in those patients in difficult positions (e.g., extrications) and in those who have copious secretions despite adequate attempts at suctioning.

Equipment

This method of intubation requires the following:

- Endotracheal tube, 7.0-, 7.5-, or 8.0-mm internal diameter
- Malleable stylet (*Note:* some prefer to perform the procedure without a stylet)
- Water-soluble lubricant (use silicone spray for mannequin)
- 12-cc syringe
- A dental prod, mouth gag, or something similar for placing between the teeth
- Rubber examining gloves
- Adult intubation mannequin

Procedure

1. Perform routine preparation procedures as taught in Chapter 5 of the student manual.
2. The tube is prepared by inserting the lubricated stylet and bending the tube into an open “J” configuration. The stylet should not protrude beyond the tip of the tube, but it should come to at least the side hole.
3. A water-soluble lubricant is used liberally on the tip and cuff of the tube.
4. Wear gloves for protection.
5. The intubator kneels at the patient’s left shoulder facing the patient, and places a dental prod or mouth gag between the patient’s molars.
6. The intubator then “walks” the index and middle fingers of his left hand down the midline of the tongue, all the while pulling forward on the tongue and jaw. *This is an important maneuver and serves to lift the epiglottis up within reach of the probing fingers.*
7. The middle finger palpates the epiglottis. It feels much like the tragus of the ear.
8. The epiglottis is pressed forward and the tube is slipped into the mouth at the left labial angle anterior to the palpating fingers. The index finger is used to keep the tube tip against the side of the middle finger (that is still palpating the epiglottis). This guides the tip to the epiglottis. The side hole of the tube can also be used as a landmark to ensure that the intubator is always aware of the position of the tip of the endotracheal tube. *This is a crucial principle of this technique.*
9. Guide the tube tip to lie against the epiglottis using the middle and index fingers. The right hand then advances the tube distally through the cords as the index and middle fingers of the left palpating hand press forward to prevent the tube from slipping posteriorly into the esophagus. *Note:* At this point the tube/stylet combination may encounter resistance, especially if the distal curve of the tube is sharp. This usually means that the tube tip is pressing on the anterior wall of the thyroid cartilage. Pulling back slightly on the stylet will allow the tube to conform to the anatomy, and the tube should slip into the trachea.
10. Confirm placement of the tube using the confirmation protocol taught in Chapter 5 of the textbook.

OPTIONAL SKILL 2: TRANSILLUMINATION (LIGHTED STYLET)

Minimum instructors needed: 1

Objectives

Upon completion of this skill station, the student should be able to:

1. Perform endotracheal intubation by the transillumination method.
2. Describe the advantages of this technique.

The transillumination or lighted stylet method of endotracheal intubation may be used because a bright light inserted inside the upper airway can be seen through the soft tissues of the neck when inside the larynx or trachea. This permits the intubator to guide the tube tip through the glottic opening without directly visualizing the cords. It has been called the indirect visual method, and it has been shown in several studies to be reliable, quick, and atraumatic. It is particularly useful for

trauma patients because it appears to move the head and neck less than conventional orotracheal methods.

Equipment

- Stylet—the lighted stylet is a malleable wire connecting a proximal battery housing to a distal lightbulb and covered with a tough plastic coating that prevents the light from being separated from the wire. The wire stylet part is 25 cm in length. An on/off switch is located at the proximal end of the battery housing.
- Endotracheal tubes—all tubes should be 7.5- to 8.5-mm internal diameter and should be cut to 25 cm to accommodate the stylet.
- Other equipment is the same as listed for the Digital Intubation skill station.

Important Points

The success of this method of intubation will depend on several factors:

1. The level of ambient light.
2. Pulling forward on the patient's tongue, or tongue and jaw.
3. The bend of the tube-stylet.

The light should be cut down to about 10% of normal, or the neck should be shielded from direct sun or bright daylight. Although the transilluminated light can be perceived in thin patients even in daylight, success will be more likely in darker surroundings.

Pulling forward on the tongue (or tongue and jaw) lifts the epiglottis up out of the way. This is essential to this method.

The tube-stylet combination should be bent just proximal to the cuff. A bend that is too far proximal will cause the tube to strike against the posterior pharyngeal wall and prevent the tube from advancing anteriorly through the glottic opening. The lubricated stylet is slipped into the tube and held firmly against the battery housings while the tube-stylet is bent. Bend more sharply if the patient is not in the sniffing position.

Procedure

1. Perform routine preparation procedures as taught in Chapter 5 of the textbook.
2. The intubator stands or kneels on either side facing the patient's head. Wear gloves for the procedure. The light is turned on.
3. The intubator grasps the patient's tongue (or, more easily, the tongue and jaw) and draws it gently forward while slipping the liberally lubricated tube-stylet combination down the tongue.
4. Using a "soup ladle" motion, the epiglottis is "hooked up" by the tube-stylet, and the transilluminated light can be seen in the midline. Correct placement at or beyond the cords is indicated by the appearance of a circumscribed, easily perceived light at the level of the laryngeal prominence. A dull glow, diffuse and difficult to see, indicates esophageal placement.
5. When the light is seen, the stylet is held firmly in place and the fingers of the other hand support the tube lying along the tongue as they advance the tube off the stylet more distally

into the larynx.

6. Confirm placement of the tube using the confirmation protocol taught in Chapter 5 of the textbook.

OPTIONAL SKILL 3: TRANSLARYNGEAL JET VENTILATION

Minimum instructors needed: 1

Objectives

Upon completion of this skill station, the student should be able to:

1. Perform translaryngeal jet ventilation.
2. Discuss indications for this procedure.

When the airway cannot be maintained because of obstruction or partial obstruction above the cords, access below the level of the cords is needed. Translaryngeal jet ventilation (TLJV) provides a quick, reliable, and relatively safe method of adequate oxygenation and ventilation, especially in the trauma patient.

Equipment

The tools needed for TLJV should be prepared well in advance and stored in a small bag or kit:

1. 14- or 13-gauge cannula, with side holes—these sizes are the minimum necessary for adequate ventilation. Side holes are especially important because they prevent the cannula from remaining against the tracheal wall and subjecting it to sudden pressures that could rupture it.
2. 5-cc syringe filled with 1 or 2 cc of saline.
3. Manual jet ventilator devices—these commercially available devices are merely valves that allow high-pressure oxygen to flow through them when a button is pushed. They should have high-pressure tubing attached solidly with special fasteners and tape.
4. Wrench—attach a small wrench to the jet ventilator tubing so that no time will be lost looking for a way to tap into the oxygen tank or turn it on.
5. Cricoid stick mannequin.

Important Points

Many misconceptions and erroneous impressions persist about this technique, and the medical literature is in a state of flux on the subject. Clinical experience and studies done using appropriate equipment in both animals and patients clearly indicate the following:

1. Patients can be both oxygenated and ventilated with this technique, which delivers 100% oxygen in volumes exceeding one liter per second.
2. Ventilation can proceed indefinitely, provided the correct size cannula is used with the proper driving pressure.
3. Cannula of 14 gauge or larger, with side holes, must be used.
4. Driving pressures of at least 50 psi must be used to deliver sufficient volumes to ensure adequate ventilation.

Patients cannot be ventilated using small-bore cannulas with continuous flow oxygen attached.

The foregoing principles must be adhered to if this technique is to be used safely and effectively.

Procedure

Identification of the cricothyroid membrane is essential to this technique, although placement between the tracheal rings would probably not result in major complications.

1. While continuing attempts at ventilation and oxygenation, puncture the cricothyroid membrane with the cannula firmly attached to a 5-cc syringe filled with 1 or 2 cc of saline. Several milliliters of 2% Lidocaine can be used instead of saline, to produce local anesthesia of the mucosa in the area of the distal port of the cannula.
2. Direct the cannula downward, with continual aspiration to promptly demonstrate entry into the larynx, identified when bubbles of air are readily aspirated. At this point, if lidocaine is contained in the syringe, it can be injected to provide some anesthesia and prevent the coughing that sometimes occurs in those patients who are somewhat responsive.
3. On entry into the larynx, slide the cannula off the needle trochar and hold it in place while the TLJV is connected to the proximal port of the cannula.
4. The patient is immediately ventilated using one-second bursts of oxygen from the 50-psi manual source. The rate used is at least 20/minute (i.e., an inspiratory/expiratory ratio of 1:2).
5. If a tie is available, fix the cannula in place. Tape can also be used, but fasten it firmly to the cannula and then around the patient's neck. Firm pressure at the site of insertion can reduce the small amount of subcutaneous emphysema that usually occurs with this technique.

Appendix A

ITLS Forms

Introduction

This document includes all of the forms provided by International Trauma Life Support for use in planning, organizing, and executing ITLS courses. The forms that follow are samples and may be modified or personalized as a Chapter or Training Centre deems appropriate. However, it is important to maintain the general content presented on these sheets.

Overview of Available Forms

All of the forms included in this document are listed below with a short explanation of the form's purpose and use.

- **Course Coordinator Checklist:** To be completed by Course Coordinators as they plan, organize and complete a course.
- **Proposed Course Budget & Financial Summary:** To be completed by Course Coordinators as they plan, organize and complete a course.
- **Post-Course Checklist:** To be completed by Course Coordinators after a course and sent with course materials and course fees to Chapter/Training Centre Office. Must be received within designated time frame after course.
- **Confirmation Letter to Course Faculty:** To be completed by Course Coordinators and sent to all course faculty members in advance of a course. Should accompany any additional supporting materials for instructors, including assignments and teaching materials.
- **Confirmation Letter to Course Registrants:** To be completed by Course Coordinators and sent to all course registrants in advance of a course (when student's registration is received). Should accompany any additional supporting materials for students, including the textbook and pre-test materials.
- **Affiliate Faculty Course Evaluation:** To be completed by affiliate faculty member(s) at the completion of course.
- **Instructor Monitor Form:** To be completed by affiliate faculty member(s) to evaluate an instructor candidate's performance teaching at a Provider course.
- **Student Evaluation for Provider Course:** To be completed by participants at the conclusion of the course. Evaluation may be modified to be appropriate for any type of ITLS course. Content of evaluation may also be modified at the discretion of the Chapter/Training Centre.

INTERNATIONAL TRAUMA LIFE SUPPORT
COURSE COORDINATOR CHECKLIST

COURSE DATE: _____ COURSE NUMBER: _____

LOCATION: _____

I. THREE MONTHS BEFORE THE COURSE

- A. Prepare budget** _____
- B. Request approval of course through CMS or from Chapter Committee** _____
- C. Identify and confirm**
 - 1. Medical Director _____
 - 2. Course Coordinator _____
 - 3. Affiliate faculty _____
- D. Arrange course facilities**
 - 1. Course location _____
 - 2. Lodging _____
 - 3. Refreshments _____
 - a. Coffee _____
 - b. Lunches _____
 - c. Faculty dinner _____
 - 4. Course equipment
 - a. AV equipment _____
 - b. Projector _____
 - c. Podium _____
 - d. Skill station equipment _____

(Refer to ITLS Instructor Manual)
- E. Contact potential faculty, station assistants, patient models**
 - 1. Faculty
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - 2. Station Assistants
 - a. _____
 - b. _____
 - 3. Patient Models
 - a. _____
 - b. _____
- F. Arrange course schedule** _____
- G. Create and distribute course advertisement** _____

II. TWO MONTHS BEFORE THE COURSE

- A. Order textbooks _____**

III. ONE MONTH BEFORE THE COURSE

A. Prepare pre-course packets

1. Student pre-course packets
 - a. Introductory letter _____
 - b. Hotel accommodation information _____
 - c. ITLS textbook _____
 - d. Pretest _____
 - e. Course agenda _____
 - f. Map _____
 - g. ITLS specialty items order form _____
2. Faculty pre-course packets
 - a. Introductory letter with assignments _____
 - b. Hotel accommodation information _____
 - c. Lecture slides _____
 - d. Course schedule _____
 - e. Course material _____
 - f. Testing scenario _____
 - g. Map _____

- B. Mail textbooks and pre-course packets to students _____**

- C. Mail pre-course packets to faculty _____**

IV. TWO WEEKS BEFORE THE COURSE

- A. Confirm patient models _____**

- B. Confirm station assistants _____**

C. On-site packets

1. Course Students
 - a. Name tag _____
 - b. Final course schedule _____
 - c. Faculty list _____
 - d. Student list _____
 - e. Rotation schedule _____
 - f. Course evaluation forms _____
2. Faculty
 - a. Name tag _____
 - b. Final course schedule _____
 - c. Faculty list _____
 - d. Student list _____

V. DAY BEFORE THE COURSE

- A. Equipment placed in staging area ____
- B. Pre-course faculty meeting ____
- C. Arrange educational facility ____

VI. DAY OF THE COURSE

- A. Arrive early to confirm seating, temperature, refreshments and registration area ____
- B. Register students ____
- C. Introduce faculty ____
- D. Set-up skill stations ____
- E. Moulage models ____
- F. Faculty meetings as necessary ____
- G. Provide feedback to students ____
- H. Conduct post-course faculty meeting ____

VII. POST COURSE

- A. Thank-you letters to faculty, station assistants and patient models ____
- B. Course report forms and fees forwarded to the chapter office ____
- C. Reimburse faculty and staff ____
- D. Distribute course completion cards ____

INTERNATIONAL TRAUMA LIFE SUPPORT
PROPOSED COURSE BUDGET & FINANCIAL SUMMARY

COURSE DATE: _____ COURSE NUMBER: _____

LOCATION: _____

RECEIPTS:

I. Tuition:

_____ Participants @ \$ _____ each

TOTAL \$ _____

II. OTHER GRANT MONIES (IF APPLICABLE): \$ _____

TOTAL RECEIPTS \$ _____

DISBURSEMENTS:

I. Travel Expenses / Subsistence

A. Faculty & Staff

- | | |
|----------|----------|
| 1. _____ | \$ _____ |
| 2. _____ | \$ _____ |
| 3. _____ | \$ _____ |
| 4. _____ | \$ _____ |
| 5. _____ | \$ _____ |
| 6. _____ | \$ _____ |
| 7. _____ | \$ _____ |
| 8. _____ | \$ _____ |

B. Coordinator

- | | |
|----------|----------|
| 1. _____ | \$ _____ |
|----------|----------|

C. Assistants (Station assistants and patient models, etc.)

- | | |
|----------|----------|
| 1. _____ | \$ _____ |
| 2. _____ | \$ _____ |
| 3. _____ | \$ _____ |
| 4. _____ | \$ _____ |
| 5. _____ | \$ _____ |
| 6. _____ | \$ _____ |
| 7. _____ | \$ _____ |
| 8. _____ | \$ _____ |

II. Course Equipment/Material

A. Material

- | | |
|----------|----------|
| 1. _____ | \$ _____ |
| 2. _____ | \$ _____ |

B. Office Supplies/ Services

- | |
|-------------------------|
| 1. Postage \$ _____ |
| 2. Photocopies \$ _____ |

3. _____ \$ _____
4. _____ \$ _____
5. _____ \$ _____

C. Expendable Equipment

1. _____ \$ _____
2. _____ \$ _____
3. _____ \$ _____
4. _____ \$ _____

D. Non-Expendable Equipment

1. _____ \$ _____
2. _____ \$ _____
3. _____ \$ _____
4. _____ \$ _____

E. Facilities/Services

1. Room Rental \$ _____
2. Audio-Visual Rental \$ _____
3. Coffee Break(s) \$ _____
4. Lunch(es) \$ _____
5. Dinner(s) \$ _____
6. Administrative Charges \$ _____
7. _____ \$ _____
TOTAL \$ _____

III. Indirect Cost Charges

A. ITLS Chapter/Training Centre fee
_____ Participants @ \$ _____ each
B. ITLS International fee
_____ Participants @ \$ _____ each

TOTAL \$ _____

TOTAL RECEIPTS \$ _____

Minus TOTAL DISBURSEMENTS \$ _____

TOTAL NET GAIN OR LOSS \$ _____

COURSE COORDINATOR

DATE

INTERNATIONAL TRAUMA LIFE SUPPORT
POST-COURSE CHECKLIST

***Please complete and send this form with payment to your Chapter or Training Centre along with an Affiliate Faculty course evaluation form and Instructor Monitor forms (if applicable).**

CMS Course #:

Course Date:

Course Coordinator:

Course Facility/Location:

Student Course Fees

(Note: Fees below should reflect the Chapter/Training Centre fees)

Number of:

_____ Advanced Provider certification	x \$<AMOUNT> = \$ _____
_____ Advanced Provider recertification	x \$<AMOUNT> = \$ _____
_____ Basic Provider certification	x \$<AMOUNT> = \$ _____
_____ Basic Provider recertification	x \$<AMOUNT> = \$ _____
_____ Instructor certification (Basic or Advanced)	x \$<AMOUNT> = \$ _____
_____ Pediatric Provider certification	x \$<AMOUNT> = \$ _____
_____ Access certification	x \$<AMOUNT> = \$ _____

\$ _____ Total Enclosed

Please put an "X" after each item enclosed:

1. Affiliate Faculty Course Evaluation form _____
2. Instructor Monitor forms (if applicable) _____
3. Payment of fees _____

Payment method: _____

INTERNATIONAL TRAUMA LIFE SUPPORT
CONFIRMATION LETTER TO INSTRUCTORS

Date:

To: ITLS Instructors

From: Course Director

RE: Assignments - Course Location and Date

Thank you for your agreement to serve as an instructor at the **<TYPE OF COURSE>** to be held on **<DATE OF COURSE>** at **<NAME OF FACILITY>**, **<MAILING ADDRESS>**.

Agendas indicating the assignment of lectures, skill stations and patient assessment testing are enclosed. Your **assignments** are highlighted on the agendas.

If you are lecturing, the slides for your topic are enclosed. They should be returned to **<COURSE COORDINATOR>** immediately following your lecture.

Please review the ITLS Instructor Guide for station objectives and important points when preparing for the teaching stations. For patient evaluation and testing, we have enclosed a copy of your assigned scenario. Instructors are responsible for orienting the models to their roles *prior* to the testing session.

Enclosed are:

- A map indicating the general area of the course location
- Faculty informational material
- Scenarios for the testing stations
- Course agendas
- Slides for lecturing

If you have any questions, please contact **<COURSE COORDINATOR>** at **<PHONE NUMBER>** or **<EMAIL ADDRESS>**.

Sincerely,

Course Director

+Enclosures

INTERNATIONAL TRAUMA LIFE SUPPORT
CONFIRMATION LETTER TO COURSE REGISTRANTS

Date:

Dear ITLS Registrant:

Thank you for registering for the ITLS **<TYPE OF COURSE>** to be held on **<DATE OF COURSE>** at **<NAME OF FACILITY>**, **<MAILING ADDRESS>**.

Enclosed you will find the following materials:

- ITLS textbook
- Pretest and answer key
- Course agenda
- Map with directions to course location

The **<TYPE OF COURSE>** is an intense, **<COURSE LENGTH>** learning experience that consists of didactic presentations, skill stations, a written examination and patient assessment testing. It is extremely important that you be familiar with the text and be well prepared prior to the course. Take the pretest after you have studied the text. Check your responses with the answer key provided.

We suggest you wear casual clothes. Several skill stations require floor work with various types of equipment.

If you have any questions, please contact **<COURSE COORDINATOR>** at **<PHONE NUMBER>** or **<EMAIL ADDRESS>**. We look forward to seeing you at the course!

Sincerely,

Course Director

+Enclosures

INTERNATIONAL TRAUMA LIFE SUPPORT
AFFILIATE FACULTY COURSE EVALUATION

Course Type:

Course Location:

Course Date:

Course CMS # :

Medical Director:

Course Coordinator:

Number of Students: _____

Number Passed: _____

Number Failed: _____

Number Incomplete: _____

Number Retest: _____

	<u>Acceptable</u>	<u>Unacceptable</u>
1. Pre-Course Planning	_____	_____
2. Adequate Facilities	_____	_____
3. Adequate Number of Faculty	_____	_____
4. Written Material Distributed	_____	_____
5. Audio / Visual Aids	_____	_____
6. Adequate Amount of Equipment	_____	_____
7. Didactic Presentations	_____	_____
8. Skill Stations	_____	_____
9. Patient Assessment Stations	_____	_____
10. Written Examinations	_____	_____
11. Problem Solving	_____	_____
12. Post-Course Faculty Meeting	_____	_____

Comments:

Affiliate Faculty Signature: _____

Date: _____

Printed Name:

INTERNATIONAL TRAUMA LIFE SUPPORT
Instructor Monitor Form

Instructor Candidate's Name: _____

Monitoring Location & Dates: _____

Course CMS #: _____

Course Coordinator: _____

Initial Instructor Course Date & Location: _____

Please circle the number that best describes evaluation of the instructor's performance:

4 = Excellent	3 = Good	2 = Unsatisfactory	1 = Poor	N/A = Not observed
---------------	----------	--------------------	----------	--------------------

1. Lecture

Topic _____					
- Overall knowledge	4	3	2	1	N/A
- Speaking ability	4	3	2	1	N/A
- Ability to handle questions	4	3	2	1	N/A
- Use of audiovisuals	4	3	2	1	N/A

2. Skill Station

Station _____					
- Knowledge of objectives	4	3	2	1	N/A
- Presentation	4	3	2	1	N/A
- Ability to handle questions	4	3	2	1	N/A
- Utilization of teaching aids	4	3	2	1	N/A

3. Patient Assessment Testing Station

Scenario # _____					
- Knowledge of objectives	4	3	2	1	N/A
- Presentation of scenario	4	3	2	1	N/A
- Documentation	4	3	2	1	N/A

AVERAGE OF SCORES: _____

Comments: _____

Recommended for certification? _____ Yes _____ No

How many times has Instructor Candidate been monitored? _____

Affiliate Faculty Signature: _____

Date: _____

Printed Name: _____

INTERNATIONAL TRAUMA LIFE SUPPORT

STUDENT EVALUATION FOR PROVIDER COURSE

Student Name (optional):

Course Coordinator:

Course Date:

Course Location:

Thank you for attending the ITLS Provider Course. This evaluation form should be completed and turned into the Course Coordinator at the conclusion of the course.

Please rate the course as follows by circling the appropriate number:

	Excellent	Good	Average	Fair	Poor	No opinion
Overall, the course was:	5	4	3	2	1	NO
The time allotted to cover didactic material was:	5	4	3	2	1	NO
The time allotted to cover practical skills was:	5	4	3	2	1	NO

Please circle the number that best describes your opinion of each lecture topic:

	Excellent	Good	Average	Fair	Poor	No opinion
Scene Size-up	5	4	3	2	1	NO
Trauma Assessment and Management	5	4	3	2	1	NO
Airway Management	5	4	3	2	1	NO
Thoracic Trauma	5	4	3	2	1	NO
Shock	5	4	3	2	1	NO
Head Trauma and Traumatic Brain Injury	5	4	3	2	1	NO
Spinal Trauma and Patient-Centered Spinal Motion Restriction	5	4	3	2	1	NO
Abdominal Trauma	5	4	3	2	1	NO
Extremity Trauma	5	4	3	2	1	NO
Burns	5	4	3	2	1	NO
Pediatric Trauma	5	4	3	2	1	NO
Geriatric Trauma	5	4	3	2	1	NO
Trauma in Pregnancy	5	4	3	2	1	NO
The Impaired Patient	5	4	3	2	1	NO
Trauma Arrest	5	4	3	2	1	NO
Standard Precautions and Transmission-Based Precautions	5	4	3	2	1	NO

Please circle the number that best describes your opinion of each skill station:

	Excellent	Good	Average	Fair	Poor	No opinion
Assessment Skills	5	4	3	2	1	NO
Airway Skills	5	4	3	2	1	NO
Thoracic Trauma Skills	5	4	3	2	1	NO
Vascular Access Skills	5	4	3	2	1	NO
Spine Management Skills	5	4	3	2	1	NO
Extremity Trauma Skills	5	4	3	2	1	NO

-OVER-

Please evaluate the expertise of each faculty member individually:

Faculty	Excellent	Good	Average	Fair	Poor	NA
	5	4	3	2	1	NA
	5	4	3	2	1	NA
	5	4	3	2	1	NA

	Excellent	Good	Average	Fair	Poor	No opinion
Your level of skill and comfort in the treatment of a trauma patient <u>prior to</u> taking this course?	5	4	3	2	1	NO
Your level of skill and comfort in the treatment of a trauma patient <u>after</u> taking this course?	5	4	3	2	1	NO

I am a: *(circle all that apply)*

☐ First Responder (EMR) ☐ Practical Nurse ☐ Physician Assistant
☐ EMT-B (EMT) ☐ EMT-P (Paramedic) ☐ Registered Nurse
☐ Physician (MD/ DO) ☐ EMT-I (AEMT)
☐ Other, please specify: _____

What is your age?

☐ Under 30 ☐ 30-40 ☐ 40-50 ☐ 50-60 ☐ Over 60

How do you plan to use this information in your practice setting?

What was the strongest feature of this course?

What was the weakest feature of this course?

General comments and/or suggestions:

Thank you for your time and comments.

Appendix B

Moulage

The purpose of makeup or moulage is to help the student's assessment by making the patient situation more realistic. The students will get the feel of an emergency situation more easily if the patient has injuries that appear genuine. Beautiful but delicate makeup is often destroyed before the first group of students is through their practice; thus, you must use judgment in applying makeup. Many injuries or signs of injury (distended neck veins, deviated trachea, sucking chest wound, flail chest) can be shown better (and longer) by simply writing on a piece of white tape and sticking it to the skin in the appropriate place. If the student examines the patient and sees "distended neck veins" and "trachea deviated to the right" written on the tape, the effect is better than having to ask the instructor or having to guess what smudged or "fallen off" moulage once represented. Makeup is probably best used to simulate cyanosis or shock, bruising, lacerations, burns, or abrasions. Having an experienced makeup artist prepare the models is preferable, but with a little knowledge and practice, the average person can do a good job.

SELECTING MODELS

Treatment of the multiple trauma patient requires exposure of the injured areas so less embarrassment is involved if the models are advised to wear swimsuits or tank tops and shorts under their street clothes.

If the "patients" have some knowledge of the symptoms pertaining to their "injuries," it will be more realistic. EMTs and students often make the best "patients," and it is a learning experience for them. The faculty in each station should discuss with the model exactly how to portray his or her injuries. If you choose to do moulage, allow a minimum of 2 hours for model preparation.

MAKEUP KIT

Commercial wound simulation kits are available. They contain artificial blood, other makeup materials, and various plastic or rubber simulated injuries to be attached to the skin. You can assemble your own makeup kit to save cost. The following lists include many of the items necessary. Almost all of the material can be found at a local hardware, grocery, or drugstore.

<i>Item</i>	<i>Quantity</i>
Isopropyl alcohol	1 bottle
Vaseline®	1 jar
Paper towels	2 rolls
K-Y® Jelly	2 tubes

Cold cream	1 jar
Small hair dryer	1
Facial tissues	1 box
Glycerin	1 bottle
Spray bottle	2
Assorted sponges (to apply makeup)	
Saran™ Wrap (plastic wrap)	1 roll
Rubber condoms	6
Red, blue, and black felt-tip pens	1 each
Can of waterless hand cleaner	1
Alka-Seltzer® tablets	1 small bottle
Makeup colors: maroon, red, white, blue, brown, yellow, flesh, black	
Artificial blood (theatrical supply)	1 pack
Plumber's putty (hardware store; it takes the place of mortician's wax)	1 can
Duo® surgical adhesive (theatrical supply)	1 bottle
Grease stick, black	1
Activated charcoal	1 small container
Irrigation bulb (to apply charcoal)	1
Tongue depressors (to mold putty)	1 box
Toothpicks (to mold putty)	1 box
Soft and stiff bristled artist brushes	1 each
Scissors	1 pair
Rubber gloves (unsterile)	1 box

Additional Materials:

- Pieces of bone (from baked chicken or turkey).
- Black blood (for the depths of wounds)—mix charcoal, white petrolatum, and blood powder.
- Coagulated blood—mix K-Y® Jelly and powdered blood.
- Regular blood—mix Sta-Flo® liquid starch and food coloring or powdered blood.
- Sweat (diaphoresis)—mix two parts glycerin and one part water. Use in spray bottle.
- Ashes.
- Dirt.
- Pieces of broken clear plastic or Plexiglas®.

PROCEDURES

Skin Preparation

On areas where makeup is to be applied, first apply a thin layer of cold cream. This is very important for makeup removal. In areas where wounds are to be attached (glued prostheses or molded putty), clean the skin of all oil and grease with a paper towel and alcohol.

Wound Simulation

Applying makeup color is better done with rubber gloves or the small sponges than with your bare fingers. When using putty, use a tongue blade and a toothpick to smooth and shape.

- *Shock.* Use white makeup. Apply a *small* amount to the center of the forehead and each cheek. Smooth it out uniformly until the skin has a pale appearance. Do not apply the makeup too heavily or the model will look like a clown.
- *Cyanosis.* Use medium blue makeup. Apply a tiny amount to the nose, lips, earlobes, and fingernails. It is best to use this in conjunction with the “shock” makeup.
- *Diaphoresis.* Mix two parts glycerin and one part water in a spray bottle. Spray it on the patient just before the student begins evaluation. Keep out of patient’s eyes—it burns.
- *Blood.* Simulated blood is used in wounds and on clothing to give a dramatic effect. You will need blood of regular consistency, “clotted” blood, and “black” blood. Be very careful when using artificial blood, because it stains carpet and some tile. Place a plastic sheet under the patient to prevent the blood from coming into contact with tile or carpet.
- *Burns.* Cover the area with a thin layer of red or maroon makeup. Do not smooth it out uniformly; burns are not uniform. Now scatter several “blisters” of Vaseline® over the area. Cover this with Saran wrap or facial tissue and press it down. You will have very realistic blisters where the Saran wrap covers the globs of Vaseline®. Facial tissue can be torn to look like broken blisters. Apply black grease paint around the edges of the Saran™ wrap. Spray the area with a small amount of the glycerin–water mixture, and apply a thin layer of ashes, which should cover the edges well and give a uniform appearance. Don burned clothing.
- *Basilar skull fracture.* Put a few drops of blood in either ear. Allow a small amount to trickle down the face. Apply black makeup around eyes to simulate “raccoon eyes.”
- *Abrasions.* Apply maroon liner to the area with a makeup brush or sponge. Smooth and thin the edges so they blend into the skin. Cover the wound with a thick layer of Duo® surgical adhesive and dry with hair dryer. When it is dry, pick and tear the center of the adhesive to resemble sloughed, abraded skin. Rub a small amount of maroon and red cream over and under the adhesive layer. Apply a small amount of glycerin and then clotted blood. Dirt also adds a realistic touch.
- *Contusions.* Because bruises are usually raised in the center, it is best to use an area of bony prominence for bruises. Apply red and maroon cream, mixed together. Thin the outside edge in an irregular manner. Use a brush to apply blue liner to the outer one-third of the red-maroon area. Do not blend in completely. It should have a mottled appearance.
- *Lacerations.* First clean the skin well with alcohol. With plumber’s putty, fashion a thin layer (1/8-inch thick at the thickest part) on the clean skin. Feather the edges. Use the edge of the

tongue blade to make a gash across the putty. Use flesh-colored makeup over the entire area and the surrounding skin to blend the putty and skin. Apply black blood to the depth of the wound. Mix clotted blood and ashes and dab the mixture on the area; then pour a small amount of blood into the gash and allow it to trickle down.

- *Sucking chest wound.* Clean the skin with alcohol. Apply putty with one-half of an Alka-Seltzer® tablet embedded in it. Feather the edges, and make a hole in the putty to resemble a penetrating wound. Apply maroon or red makeup. Dab on a mixture of blood and ashes. Now make a hole down to the Alka-Seltzer® tablet. Just before the student comes in, pour a small amount of artificial blood down the hole onto the tablet. It will bubble like a sucking chest wound.
- *Penetrating object.* This wound is simulated with the same technique as lacerations and sucking chest wounds. Use enough putty to secure the penetrating object. Do not use heavy objects (they will pull the putty loose) or sharp objects (they may cause real lacerations). Use plastic, not glass.
- *Protruding intestines.* You may use the commercial moulage for this or make very realistic intestines from two rubber condoms filled with K-Y® Jelly. The ends are tied off and wrapped around each other to simulate loops of intestines. Vascular markings are made with the red and blue felt-tip pens. Attach these to the skin, and apply clotted and regular artificial blood.
- *Open fractures.* Commercial moulage is best for this, but if you must, apply and blend putty to the area. Incise the putty with a toothpick or tongue blade, and then apply makeup to simulate bruised and torn flesh. Use black blood in the base of the wound, and then add bone fragments (small) and clotted blood.

CLOTHING

A good source of old clothing (other than your closet) is the Salvation Army or Goodwill store. It usually has some clothing in poor condition, which can be purchased for very little cost. Get the largest sizes available. If you plan to teach courses regularly, it is best to cut the clothing at the seams and sew in VELCRO strips so the clothing can be “ripped open” for exam of the patient and then stuck back together for the next group.